GATES LEARJET CORPORATION

maintenance manual

CHAPTER

52

DOORS

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GENERAL - DESCRIPTION AND OPERATION

1. Description
 A. Doors are provided for the passenger/crew compartment, tailcone equipment section, nose compartment equipment section and landing gear. In addition, an emergency exit door is installed in the aft right side of the fuselage. All doors fit flush with the fuselage and open outward with the exception of the emergency exit door which opens inward.

2. Passenger/Crew Door
 A. The passenger/crew door is located on the fuselage left side in the forward passenger compartment. The door consists of two major parts, the upper door and the lower door. The aircraft is equipped with either a 24 inch or 36 inch door.

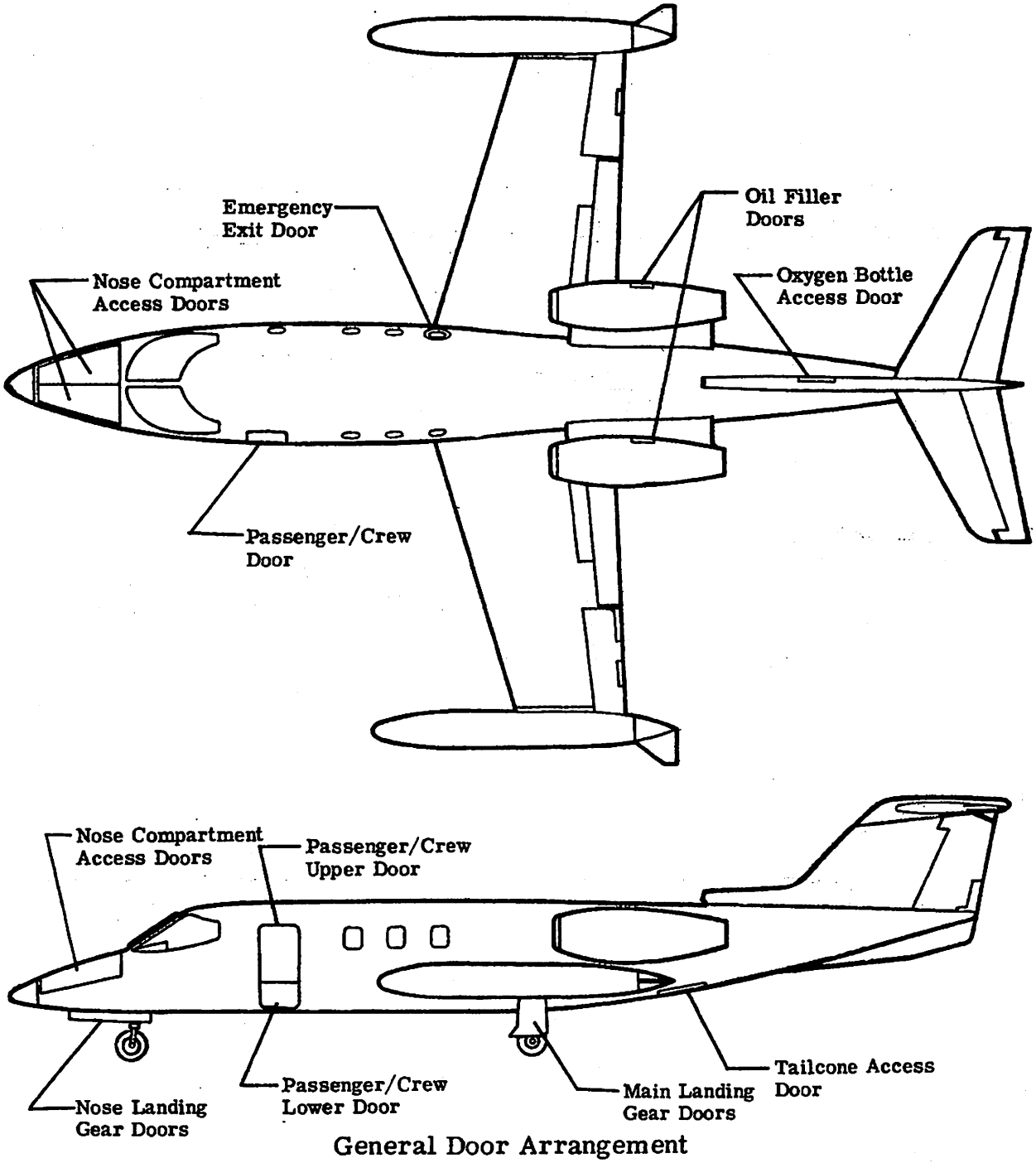
3. Emergency Exit Door
 A. The emergency exit door is located on the fuselage right side in the aft passenger compartment. The door contains a plexiglass window and can be opened from inside or outside the aircraft. The door is pulled inward into the cabin when released.

4. Service Doors
 A. The tailcone access door is located on the bottom of the fuselage aft of frame 26. The door is hinged and allows access to the batteries, electrical components, fuel filters, refrigeration equipment fire extinquisher bottles and hydraulic components.
 B. The nose compartment access doors are located on top of the fuselage forward of the windshield. The doors are completely removable and allow access to electronic equipment, emergency air bottle and anti-ice tank.

5. Door Warning System
 A. The door warning system provides the pilot with visual indication when the passenger/crew door is not properly closed and latched. Latch pins, installed in the upper and lower passenger/crew doors, extend from the door through the door frame and deenergize micro switches attached to the door frame when the door is latched shut. The lower door hook(s) incorporate a micro switch which is deenergized whenever the hook(s) is disengaged. If a latch pin fails to fully engage or the hook(s) fail to disengage, its respective micro switch will energize the DOOR Warning Light. In addition, windows in the door permit visual inspection of the latch pins.

6. Landing Gear Doors
 A. The landing gear doors enclose the landing gear when retracted

during flight. The doors are hinged to the fuselage by piano-type hinges. The nose gear doors and outboard main gear doors are operated by mechanical linkage. The inboard gear doors are operated by hydraulic actuators.



General Door Arrangement
Figure 1

PASSENGER/CREW - DESCRIPTION AND OPERATION

1. General
 A. The passenger/crew door is located on the fuselage left side in the forward passenger compartment. The door consists of an upper portion that forms a canopy when open and a lower portion with integral entrance steps.
 B. The upper portion of the door has two torsion bars to provide opening assistance. The torsion bars have an overcenter design to retain the upper door in the open position.
 C. The lower portion of the 36-inch door has cables at each end that are attached to spring loaded takeup reels to aid in closing and prevent damage to the door if it is inadvertently dropped. The 24-inch door has a snubber on the forward end of the door and a cable on the aft end of the door in lieu of two cables. A safety catch holds the lower door in place while the upper door is being raised. Hinged arms provide travel limit for the lower door. These arms are attached to a torsion bar to provide additional aid when closing the lower door
 D. Each door half has a locking handle that, when rotated, drives a series of latch pins into the fuselage structure and through interlocking arms that secure the door halves together. When locked, the door becomes a rigid structural member. A 28 vdc actuator in the lower door half operates hook(s) that pull the doors together against the door opening perimeter seal. This must be done before the latch pins will engage into the fuselage structure. The hooks must be released after the latch pins are engaged or the DOOR warning light will illuminate.
 E. Switches in the latch pin sockets will energize the DOOR warning light if the latch pins are not fully engaged.
 F. Inspection windows are provided in the door upholstery for visual inspection of latch pin operation. Pointers are painted on the latch pin linkages and align with pointers painted on door structure when the pins are properly engaged.
 G. On Aircraft 25-209 and Subsequent, a vent is installed in the outside skin of the door.

2. Operation
 A. The passenger/crew door is opened from the outside by inserting the key into key lock and rotating. When the key is rotated it energizes the actuator and releases the door hook(s). The exterior latch handle is then lifted and rotated clockwise to release the latch pins. Raise the upper door and reach inside and rotate the lower door locking handle to the open position releasing the latch pins in the lower door. Release lower door safety catch and carefully lower door to full open position.

B. To open the door from the inside, lift the latch handle in the armrest portion of the upper door. This releases the latch pins. Push the upper door to the full open position. Rotate the lower door locking handle to the open position, releasing the latch pins in the lower door. Release the lower door safety catch and, using the cable knob, carefully lower the door.

C. The door is closed from the outside by raising the lower door until safety catch engages and rotating locking handle to the locked position. With the upper door lock handle in the open position carefully lower upper door. Insert key in keylock and rotate. This energizes the hook actuator and draws the doors against their seals. Rotate upper door handle to the locked position. The door hooks must be released prior to flight.

D. To close the door from the inside, raise lower door, using cable knob, until safety catch engages. Rotate the lower door locking handle to locked position. Close upper door assuring that the locking handle is in the up position. Operate the actuator switch on the lower door to pull the doors against their seals, then rotate upper door locking handle to the locked position. Operate actuator switch to disengage door hooks. This must be done prior to flight.

E. The door hook(s) may be manually disengaged if a malfunction occurs and the hooks will not disengage. To manually disengage door hooks, peel back carpet on aft lower door step and snap out access cover. Slip ratchet over hex shaft and rotate shaft. The ratchet is located on the copilot's seat back.

PASSENGER/CREW - MAINTENANCE PRACTICES

1. General
 A. Maintenance practices for the passenger/crew door include door seal replacement, rain seal replacement, latch pin adjustment, upper door torsion bar adjustment and lower door hook mechanism adjustment.

2. Adjustment/Test
 A. Adjust Door Latch Pins (See figure 201)
 (1) Position latch handle to the full open position.
 (2) Using a depth gage check that latch pins are retracted as required in figure 201.

 NOTE: Where guide pin plates are installed, measure from outer edge of plate. Where guide plates are not installed, measure from door structure.

 (3) Position latch handle to the fully closed position.
 (4) Check that latch pin travel is as required in figure 201.
 (5) If adjustment is required, remove upholstery and access covers as required to gain access to latch pin push-pull tubes.

 NOTE: If adjustment is required on the 24-inch door, the inner door skin will have to be removed.

 (6) Disconnect the applicable rod ends from latch pins or bellcrank.
 (7) Cut safety wire, loosen jamnut and adjust rod end as required to obtain the required dimensions.
 (8) Secure rod end to latch pin with attaching parts.
 (9) Apply loctite to jamnut; tighten jamnut and safety wire.
 (10) Recheck latch pins for proper retraction and travel.
 (11) Install access panels and upholstery.
 (12) The door warning switch adjustment must be checked after adjustment to the latch pins. Refer to 52-70-00.
 B. Adjust Door Hook Mechanism (See figure 202)
 (1) Open passenger/crew doors, remove upholstery as required and remove access covers.
 (2) Hold door switch to locked position until door hook(s), eccentric, and actuator shaft are rotated to the locked position.
 (3) Remove attaching bolts from actuator and slide actuator forward to disengage from eccentric.
 (4) Remove screws, outboard attach angle and actuator.

 NOTE: If a replacement actuator is to be installed, disconnect existing actuator wiring from door switch and connect new actuator wiring. On Aircraft 25-205 and Subsequent,

disconnect actuator electrical plug. Hold door switch to lock position and allow new actuator to rotate to fully locked position.

(5) Rotate eccentric so that its lobe is positioned directly opposite of door hook position.
(6) Cut and remove safety wire and loosen friction adjustment screws sufficiently to push hook(s) down to bottom of door slots.
(7) Attach a spring scale to the throat of hook. Pull on spring scale, while torquing friction adjustment screws, until a 6 to 8 pound force is required to rotate hook(s).
(8) Safety wire friction adjustment screws.
(9) Hold door switch to the lock position and assure that actuator shaft rotates to maximum locked position.
(10) Place actuator flush with and against inboard attach angle and slide actuator shaft into eccentric. The back side of the actuator must be held flat against inboard attach angle during installation. Tilting the actuator will cause mismatching of shaft to eccentric thereby causing the actuator to cycle continuously when locked.

NOTE: Do Not adjust electrical limit switches on actuator as internal damage will result.

(11) Secure actuator with attaching bolts and install outboard attach angle.
(12) Close cabin door and hold door switch to the locked position. Actuator operation will stop when door hook(s) engages upper door latch and pulls upper door firmly into place.
(13) Hold door switch to open position and open cabin door. Install all access covers and upholstery.

C. Adjust Upper Door Torsion Bar (See figure 203)
(1) Open passenger/crew door and remove upper door panel to gain access to torsion bar.
(2) Attach a weight on the lower edge of the upper door on its vertical centerline. Use a 10 to 12 pound weight on 24-inch door and a 12 to 22 pound weight on 36-inch door.
(3) Alternately torque adjustment bolts (36-Inch Door) or adjustment nuts (24-Inch Door) 1/2 turn until door remains open with the weight attached.
(4) Safety wire adjustment bolts (36-Inch Door Only).
(5) Install previously removed panels.

D. Cable and Snubber Rigging (24-Inch Cabin Door)(See figure 204)

NOTE: During normal use the lower cabin door snubber and cable should accept a load simultaneously. This will prevent damage to the door hinge due to twisting.

(1) Remove upholstery from lower cabin door.
(2) Remove door handle and pan from door to gain access to cable installation.
(3) Remove attaching parts and cable stop from door bracket assembly.
(4) Support cabin door so that step tread is 86° to the plane of an aircraft water line.
(5) Place a light load on door (push down lightly with hand) to see if snubber has bottomed out.
(6) With no load on door install cable stop where it contacts the swaged ball on the cable.

NOTE: The cable stop may be rotated 180° if more adjustment is needed.

(7) Raise door slightly and move cable stop 1 or 2 serrations in direction to shorten cable travel. This will compensate for cable stretch.

NOTE: The snubber should bottom when cable has reached its maximum stretch.

(8) Apply a load to the door and check that the deflection of the forward and aft corners are equal. If necessary repeat step (7).
(9) Install pan and door handle and secure with attaching parts.
(10) Install upholstery.

E. Cable Rigging (36-Inch Cabin Door) (See figure 204)

NOTE: During normal use the lower cabin door cables should accept a load simultaneously. This will prevent damage to the door hinge due to twisting.

(1) Remove upholstery from lower cabin door.
(2) Remove door handle and pan from lower door to gain access to the cable installation.
(3) Remove attaching parts and cable stops from door bracket assembly.
(4) Support cabin door so that step tread is 86° to the plane of an aircraft water line.
(5) Install cable stops so that they contact the swaged ball on the cable.

NOTE: The cable stops may be rotated 180° if more adjustment is needed.

(6) Raise door slightly and move cable stops 1 or 2 serrations in

direction to shorten cable travel. This will compensate for cable stretch and maintain door at approximately 86°.

(7) Install pan and door handle and secure with attaching parts.

(8) Install upholstery.

3. Approved Repairs

A. Replace Upper Door Rain Seal (See figure 205)

(1) Open passenger/crew door and remove door panel from upper door.

(2) Remove rain seal and clean all remaining adhesive from door and door frame.

(3) Mark a line on the door frame and door where the edge of the new seal will be located.

(4) Apply a 1/4 inch wide strip of EC-776 adhesive (3M Co.) on door frame and door inside of the locating line.

(5) Apply a 1/4 inch wide strip of adhesive to the mating surface of the rain seal.

(6) Allow adhesive to air dry until adhesive will stick but not transfer to knuckle.

(7) Match the mating surfaces of seal, door and door frame and press firmly into place.

(8) Replace door panel.

B. Replace Door Seal (See figure 205)

(1) Open passenger/crew door.

(2) Scribe a mark where splice in the seal is located on forward and aft door frame.

(3) Remove door seal and clean all traces of adhesive from door frame.

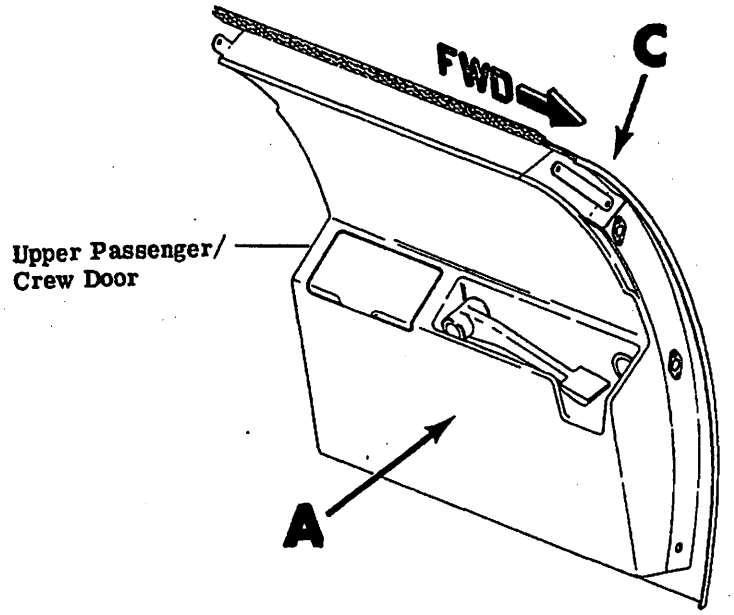
(4) Apply RTV-154 (General Electric) adhesive and install the four corner seals. Assure that the pull through tabs on the corner seals are fully engaged into holes.

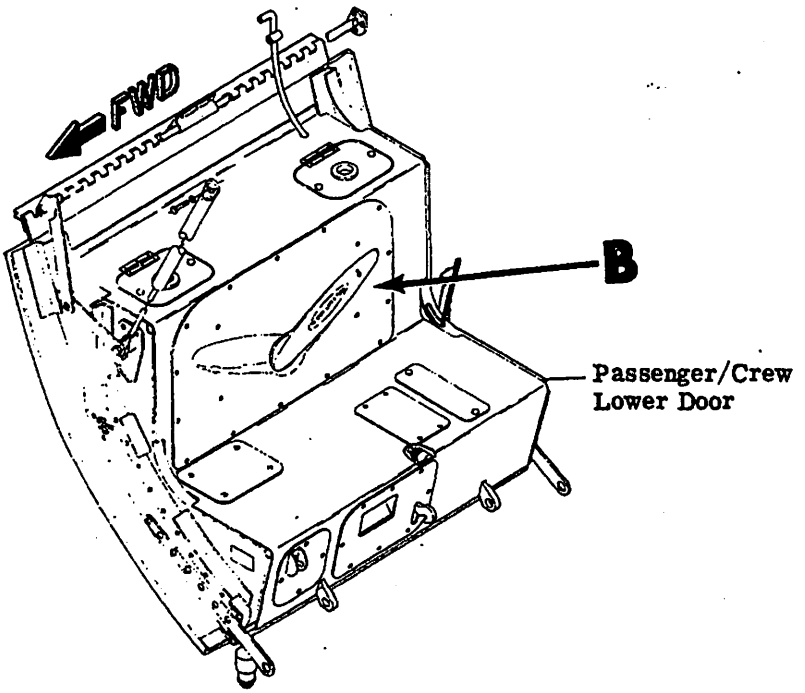
(5) Position top seal so that pull through tabs align with holes in door frame and ends overlap shoulder of corner seals. Mark and trim top seal so that the ends will butt the corner seal shoulders.

(6) Apply RTV-154 adhesive and install top seal. Assure that pull through tabs fully engage holes and corner seal plugs are fully inserted.

NOTE: Do not apply adhesive to corner seal plugs. Apply adhesive to the inside of the seal to be slipped over the plug. This will eliminate hard spots in the seal.

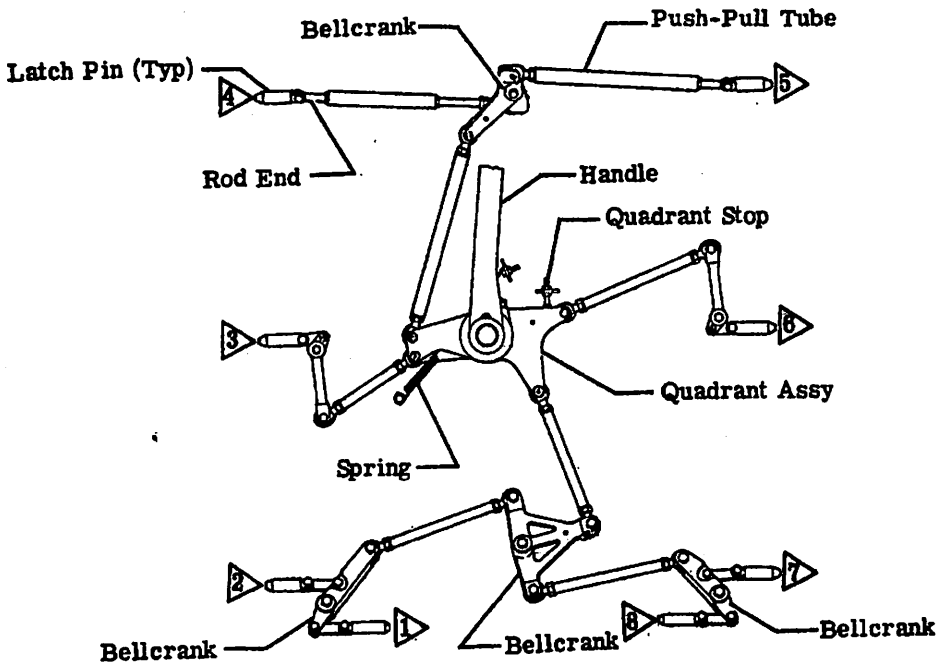
(7) Position bottom seal so that pull through tabs align with holes in door frame and ends overlap shoulder of corner seals. Mark and trim bottom seal so that the ends will butt the corner seal shoulders.





Door Latch Mechanism Installation
Figure 201 (Sheet 1 of 6)

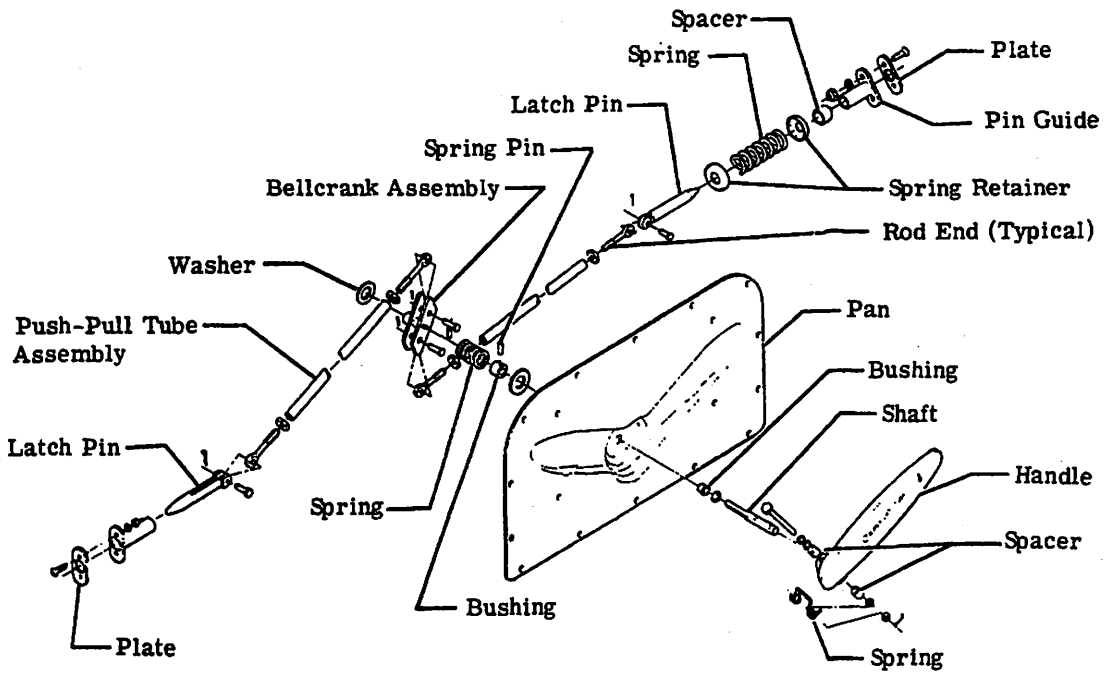
EFFECTIVITY: AIRCRAFT WITH 24-INCH DOOR



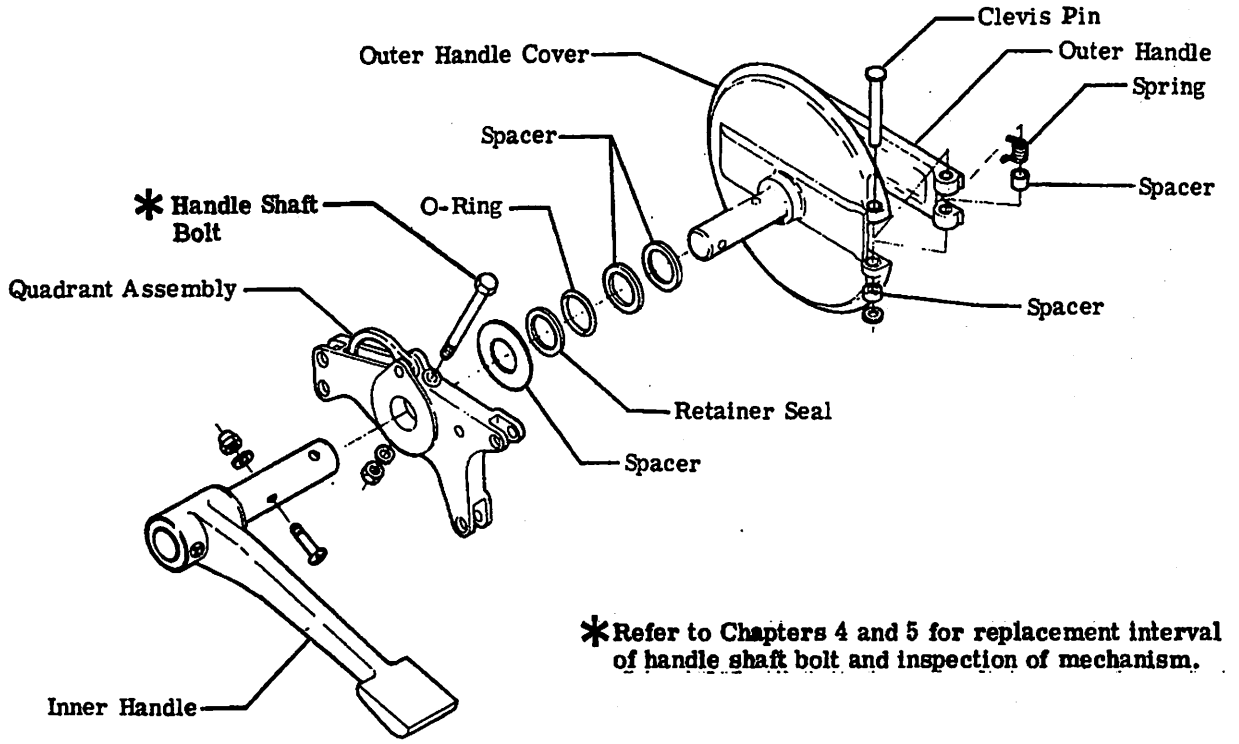
Detail A

1. On aircraft which do not have a 2511285-1 bellcrank or a 2511293-61 pin and 2511293-60 link installed at 2, the dimensions are .032 (±.010) inch retracted and .75 (+.05/-.00) inch travel.
2. On aircraft which have a 2511293-61 pin and 2511293-60 link installed at 2, the dimensions are .03 inch retracted and .70 (+.10/-.05) inch travel.
3. On aircraft which have a 2511285-1 bellcrank installed at this location, the dimensions are .10 inch retracted and .70 (+.10/-.05) inch travel.
4. On aircraft which do not have a 2511285-1 bellcrank or a 2511293-61 pin and 2511293-60 link installed at this location the dimensions are flush (+0.00/-0.03 inch) retracted and .75 (+.05/-.00) inch travel.
5. On aircraft which have a 2511293-61 pin and 2511293-60 link installed at this location, the dimensions are flush (+0.00/-0.03 inch) retracted and .70 (+.10/-.05) inch travel.
6. On aircraft which have a 2511285-1 bellcrank installed at this location, the dimensions are flush (+0.00/-0.03 inch) retracted and .80 (+.10/-.05) inch travel.
7. Rig this latch pin flush (+0.00/-0.03 inch) retracted and .85 (±.05) inch travel.
8. Rig this latch pin flush (+0.00/-0.03 inch) retracted and .85 (±.05) inch travel.
9. Rig this latch pin flush (+0.00/-0.03 inch) retracted and .85 (±.05) inch travel.
10. On aircraft which do not have a 2511285-1 bellcrank or a 2511293-61 pin and 2511293-60 link installed at 2, the dimensions are flush (+0.00/-0.03 inch) retracted and .75 (+.05/-.00) inch travel.
11. On aircraft which have either a 2511285-1 bellcrank or a 2511293-61 pin and 2511293-60 link installed at 2, the dimensions are flush (+0.00/-0.03 inch) retracted and .80 (+.10/-.05) inch travel.
12. On aircraft which do not have a 2511285-1 bellcrank or a 2511293-61 pin and 2511293-60 link installed at 2, the dimensions are .032 (±.010) inch retracted and .75 (+.05/-.00) inch travel.
13. On aircraft which have either a 2511285-1 bellcrank or a 2511293-61 pin and 2511293-60 link installed at 2, the dimensions are .10 inch retracted and .80 (+.10/-.05) inch travel.

Door Latch Mechanism Installation
Figure 201 (Sheet 2 of 6)



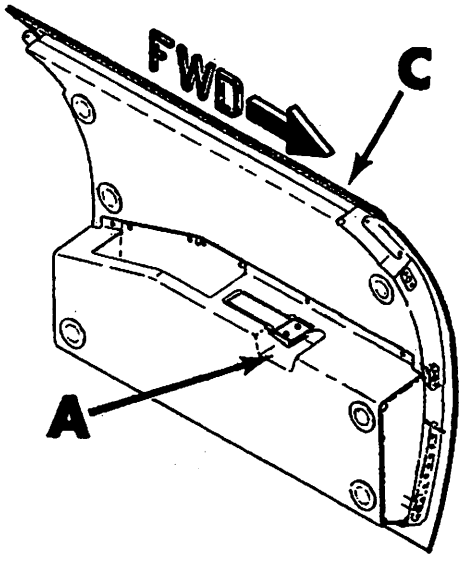
Detail B

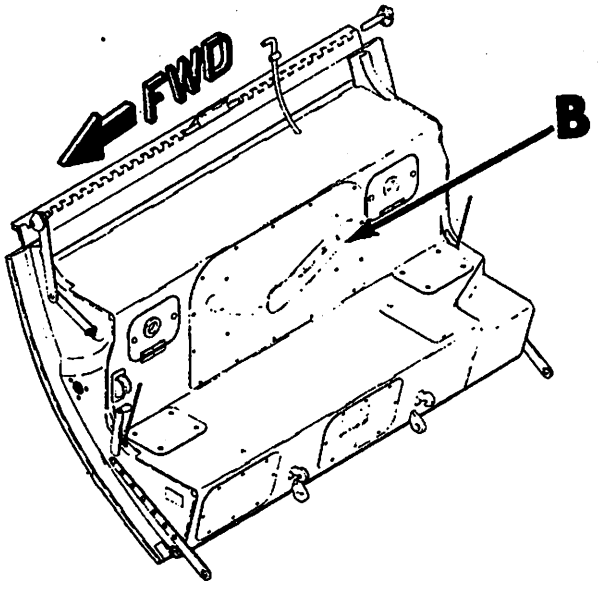


*Refer to Chapters 4 and 5 for replacement interval of handle shaft bolt and inspection of mechanism.

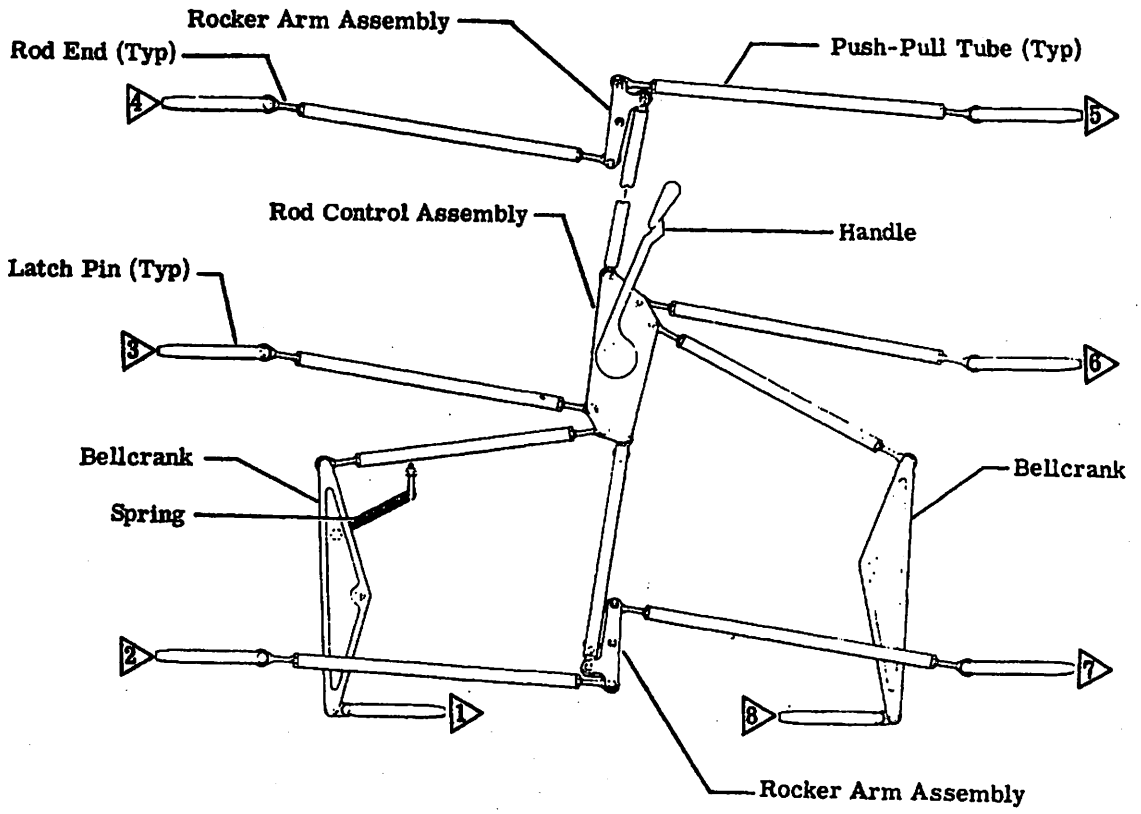
Detail C

Door Latch Mechanism Installation
Figure 201 (Sheet 3 of 6)





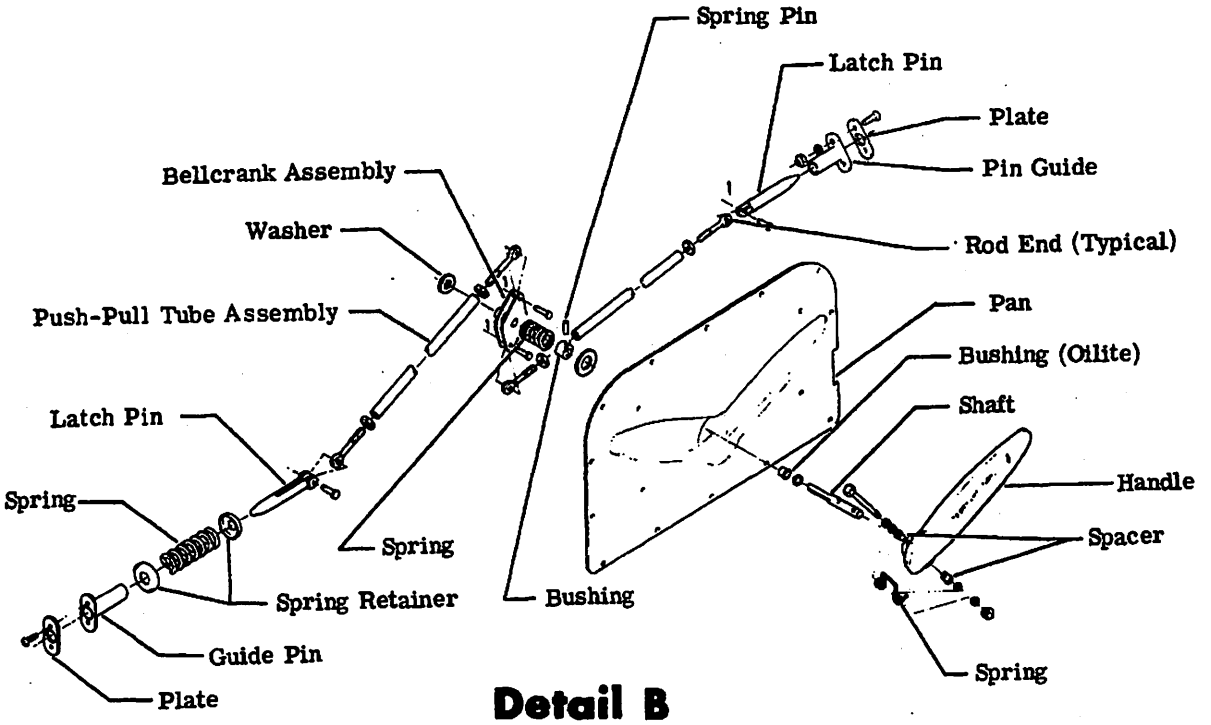
Door Latch Mechanism Installation
Figure 201 (Sheet 4 of 6)



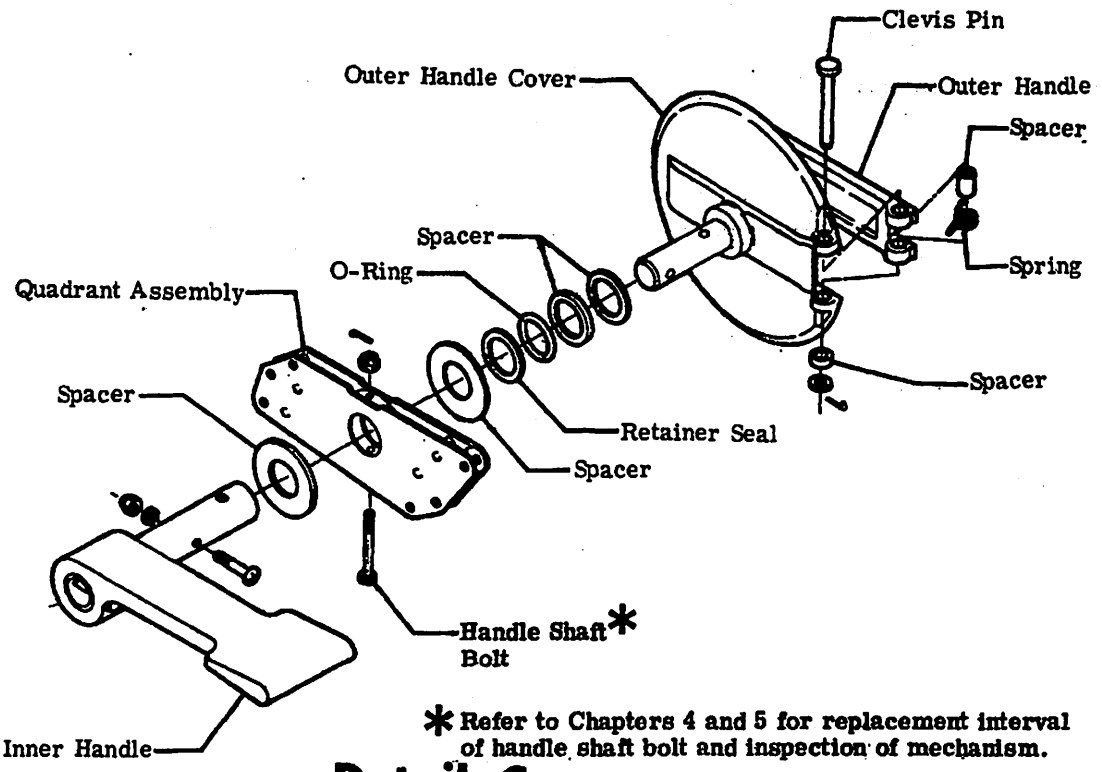
Detail A

1. Adjust to obtain .75 (±.05) inch extension.
2. Adjust to obtain .20 inch retraction.
3. Adjust to obtain .45 inch retraction.
4. Adjust to obtain .20 inch retraction.
5. Adjust to obtain .20 inch retraction.
6. Adjust to obtain .45 inch retraction.
7. Adjust to obtain .20 inch retraction.
8. Adjust to obtain .75 (±.05) inch extension.

Door Latch Mechanism Installation
Figure 201 (Sheet 5 of 6)



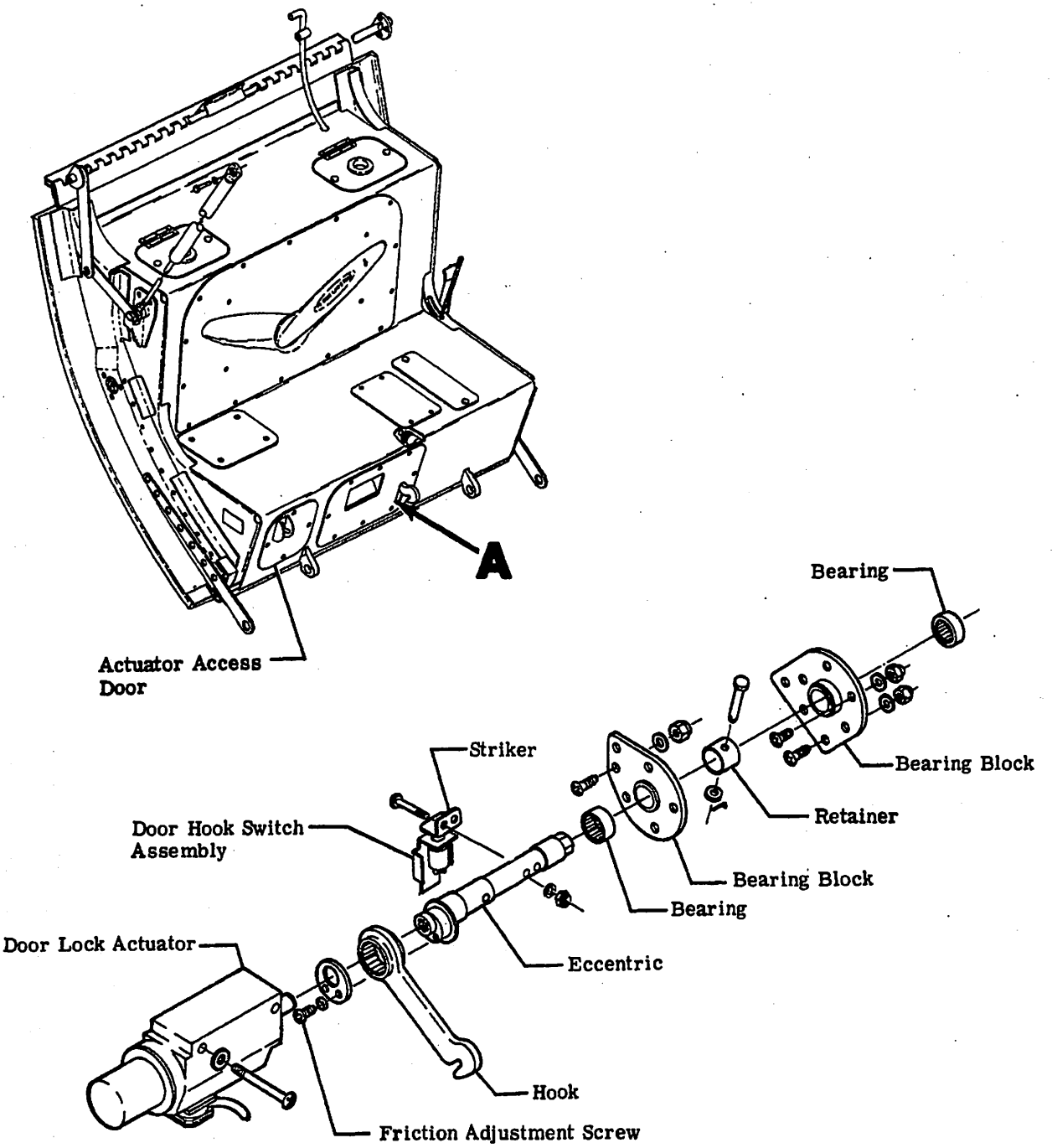
Detail B



* Refer to Chapters 4 and 5 for replacement interval of handle shaft bolt and inspection of mechanism.

Detail C

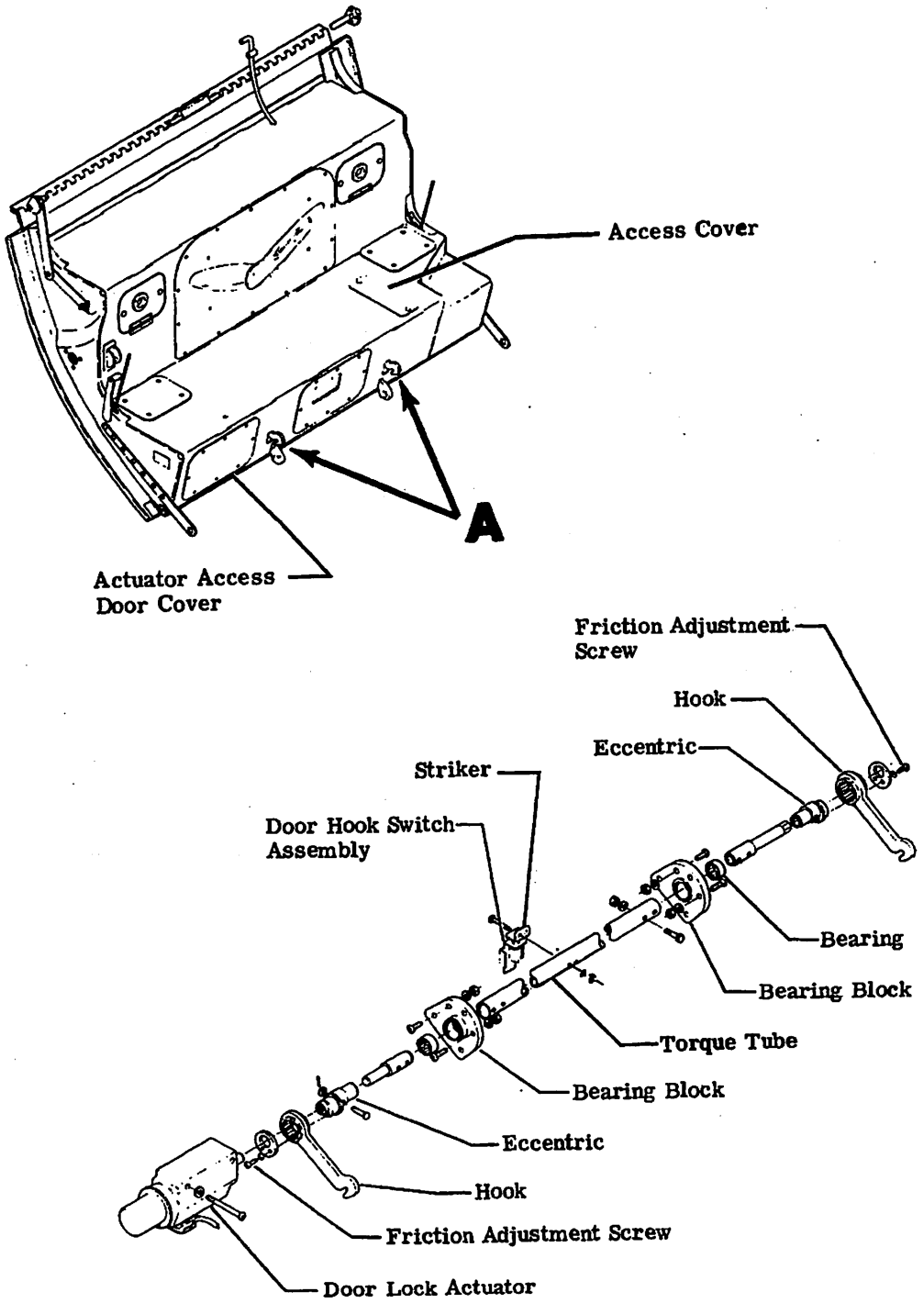
Door Latch Mechanism Installation
Figure 201 (Sheet 6 of 6)



Detail A

Door Hook Mechanism Installation
Figure 202 (Sheet 1 of 2)

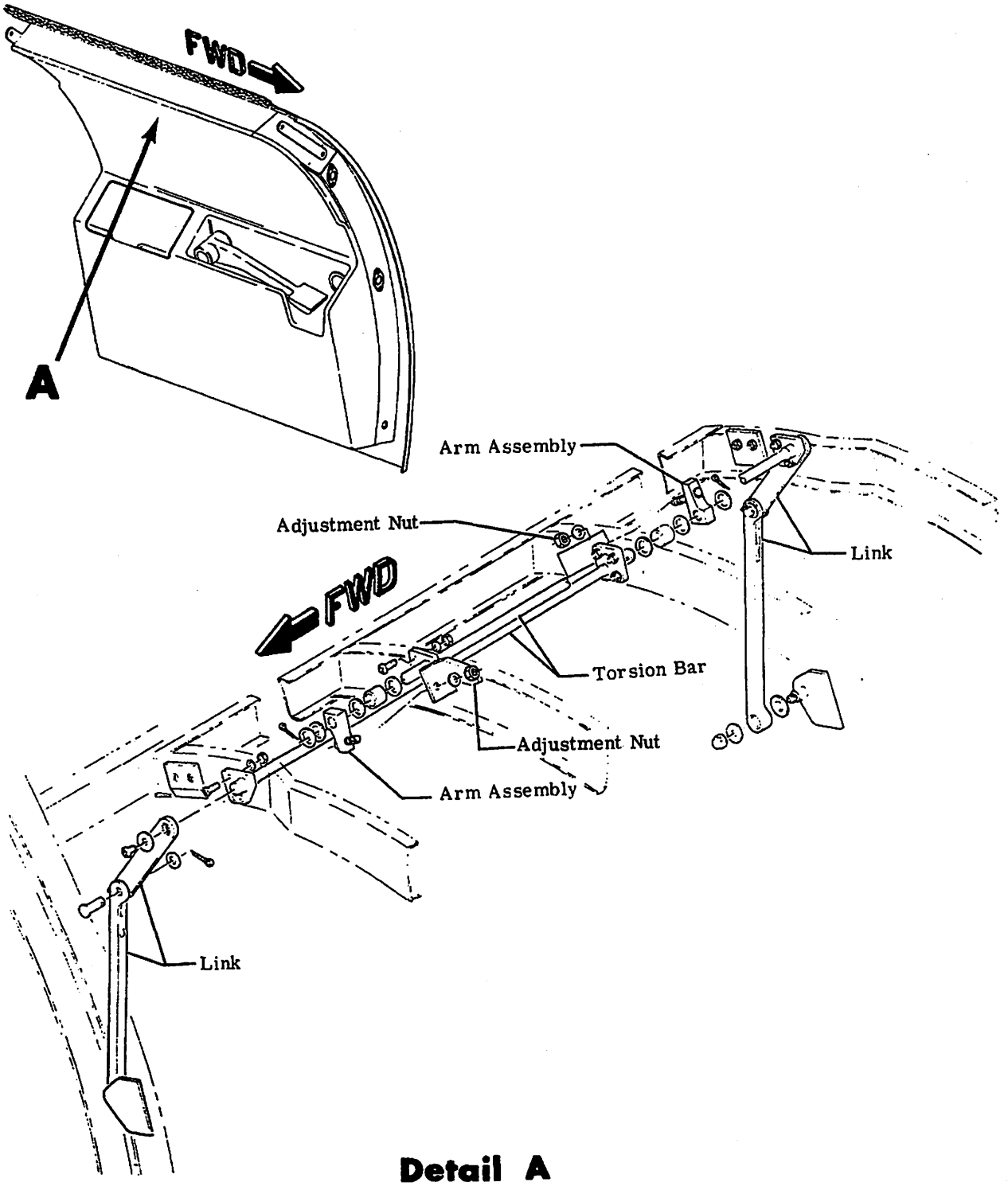
EFFECTIVITY: AIRCRAFT WITH 24-INCH DOOR



Detail A

Door Hook Mechanism Installation
Figure 202 (Sheet 2 of 2)

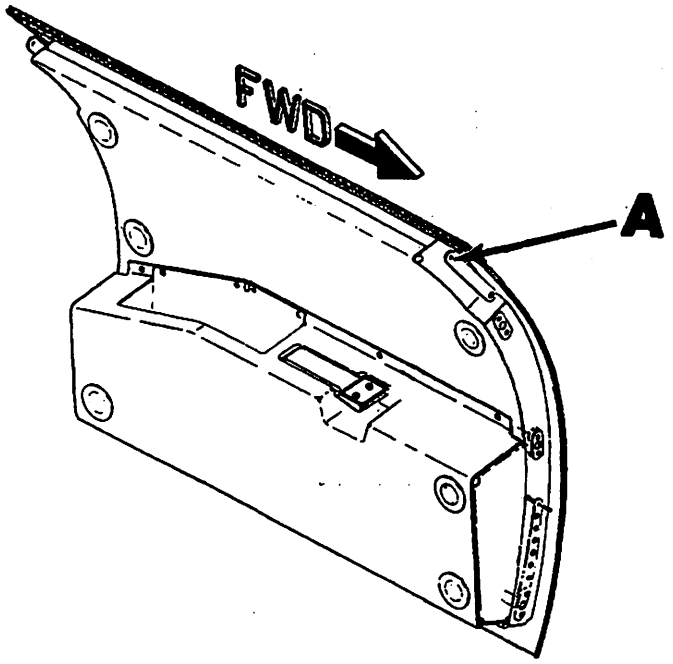
EFFECTIVITY: AIRCRAFT WITH 36-INCH DOOR

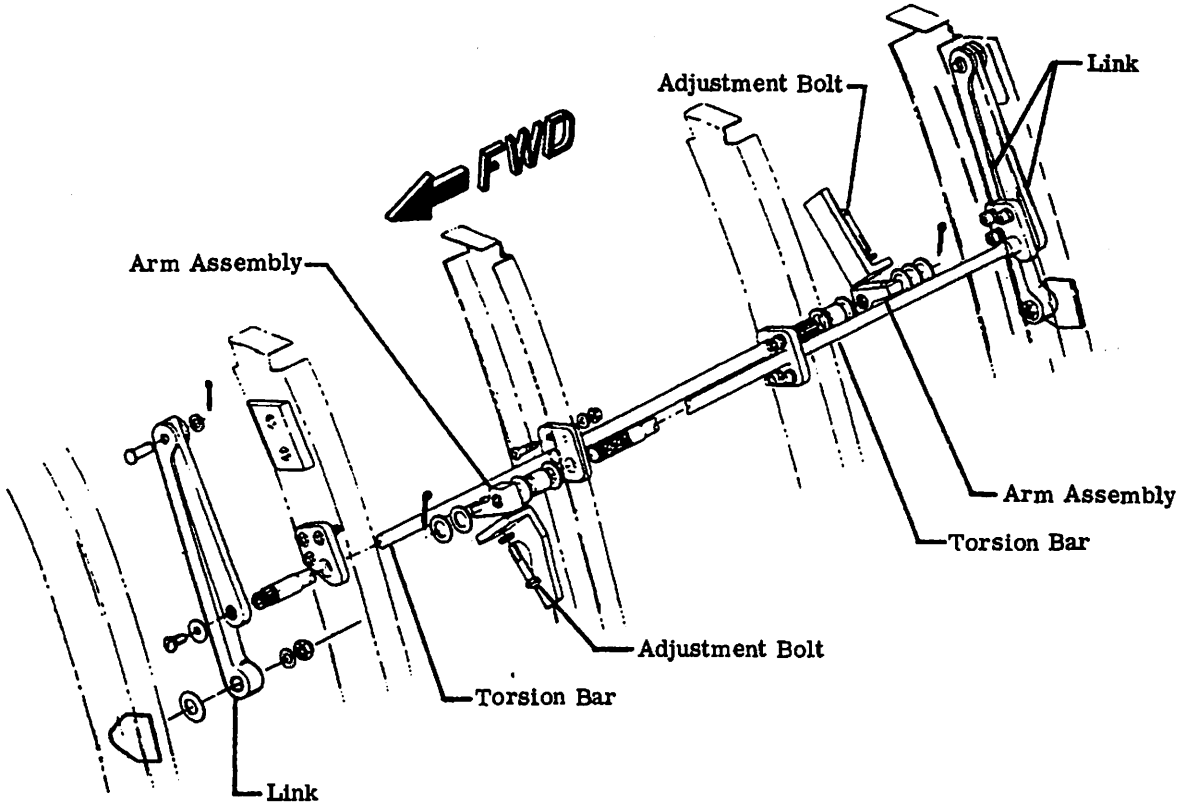


Detail A

Upper Door Torsion Bar Installation
Figure 203 (Sheet 1 of 2)

EFFECTIVITY: AIRCRAFT WITH 24-INCH DOOR

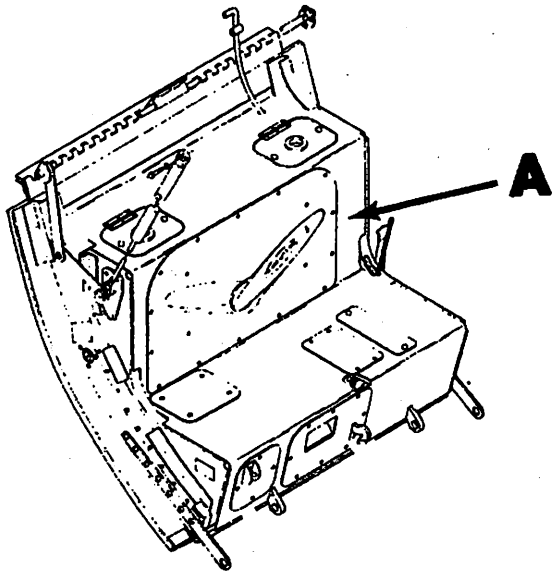


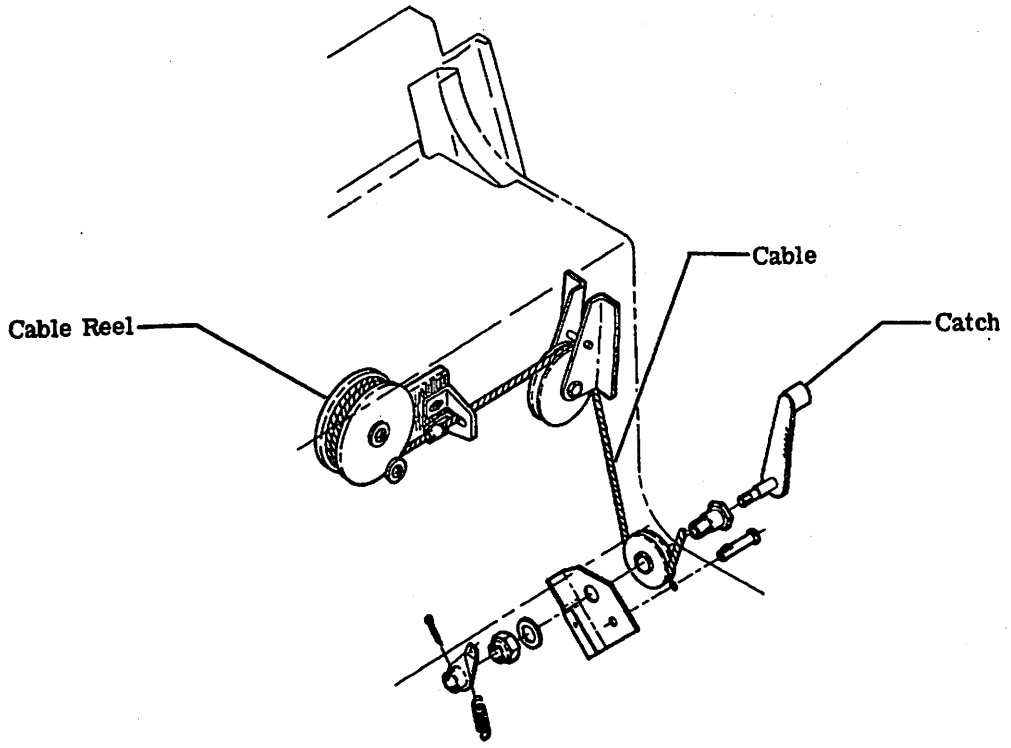


Detail A

Upper Door Torsion Bar Installation
Figure 203 (Sheet 2 of 2)

EFFECTIVITY: AIRCRAFT WITH 36-INCH DOOR

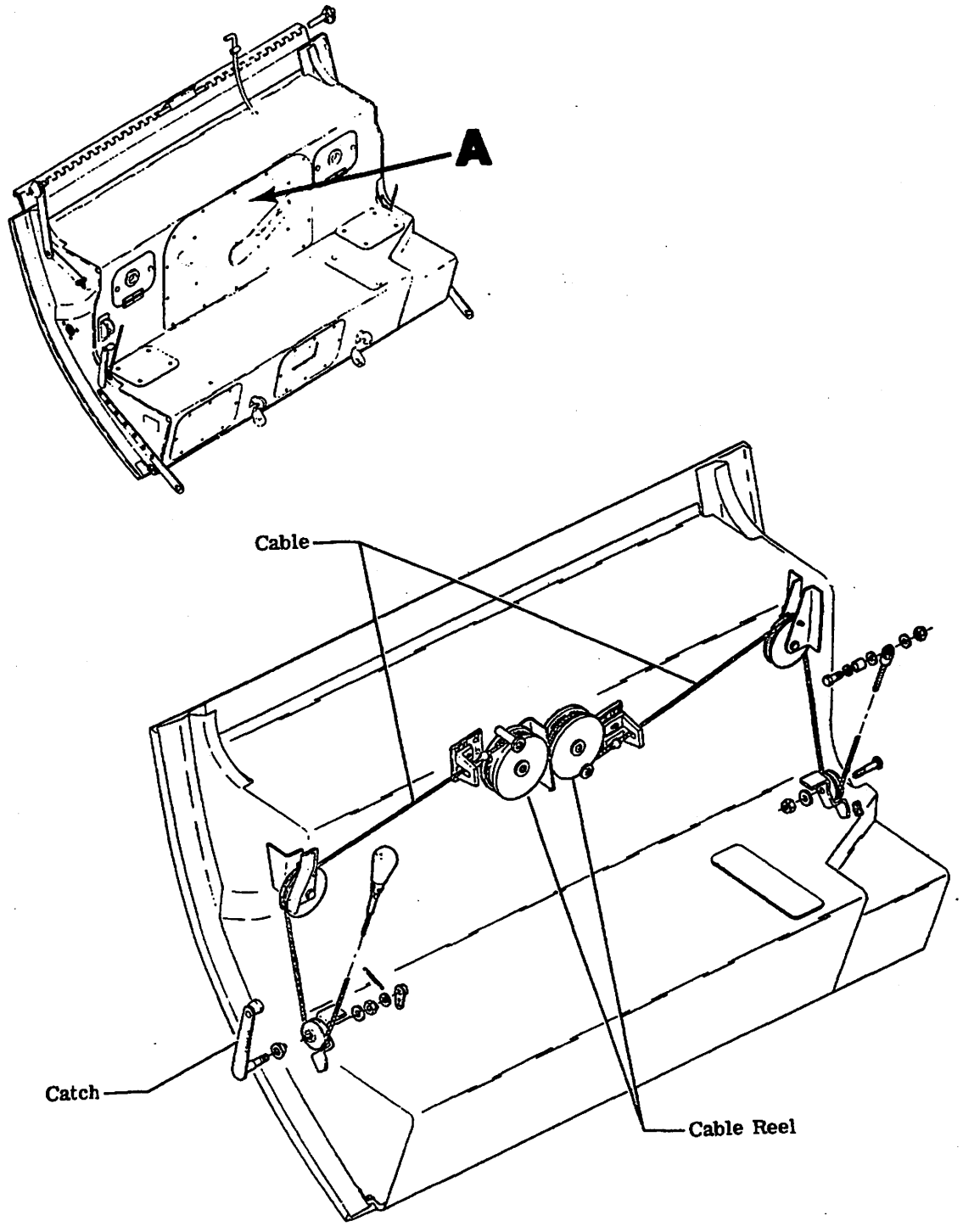




Detail A

Lower Door Cable and Reel Installation
Figure 204 (Sheet 1 of 2)

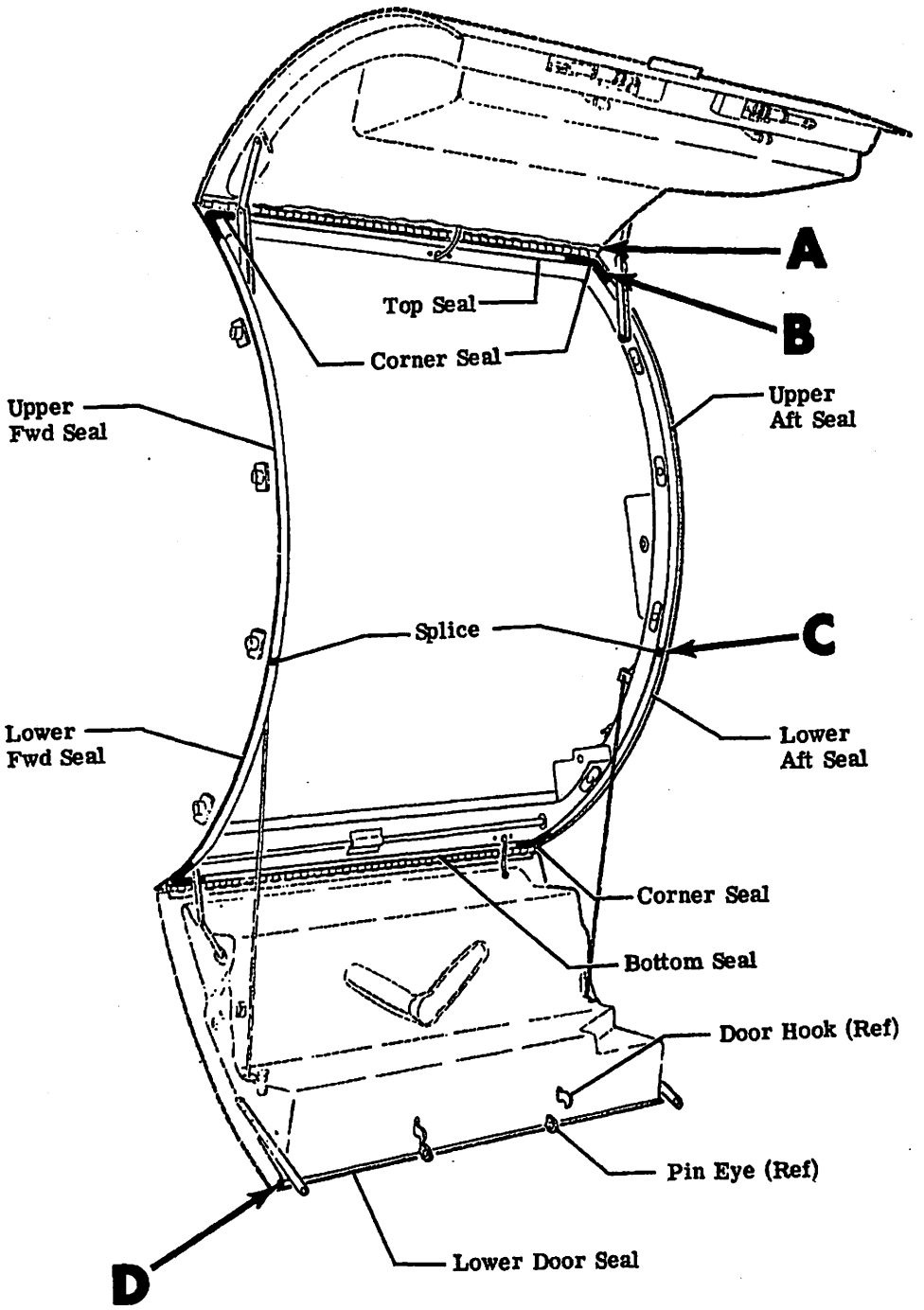
EFFECTIVITY: AIRCRAFT WITH 24-INCH DOOR



Detail A

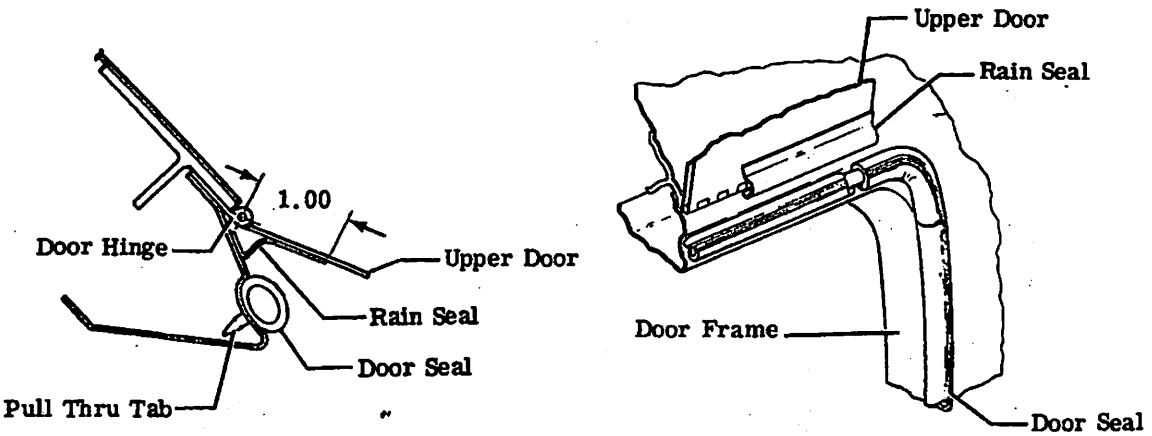
Lower Door Cable and Reel Installation
Figure 204 (Sheet 2 of 2)

EFFECTIVITY: AIRCRAFT WITH 36-INCH DOOR

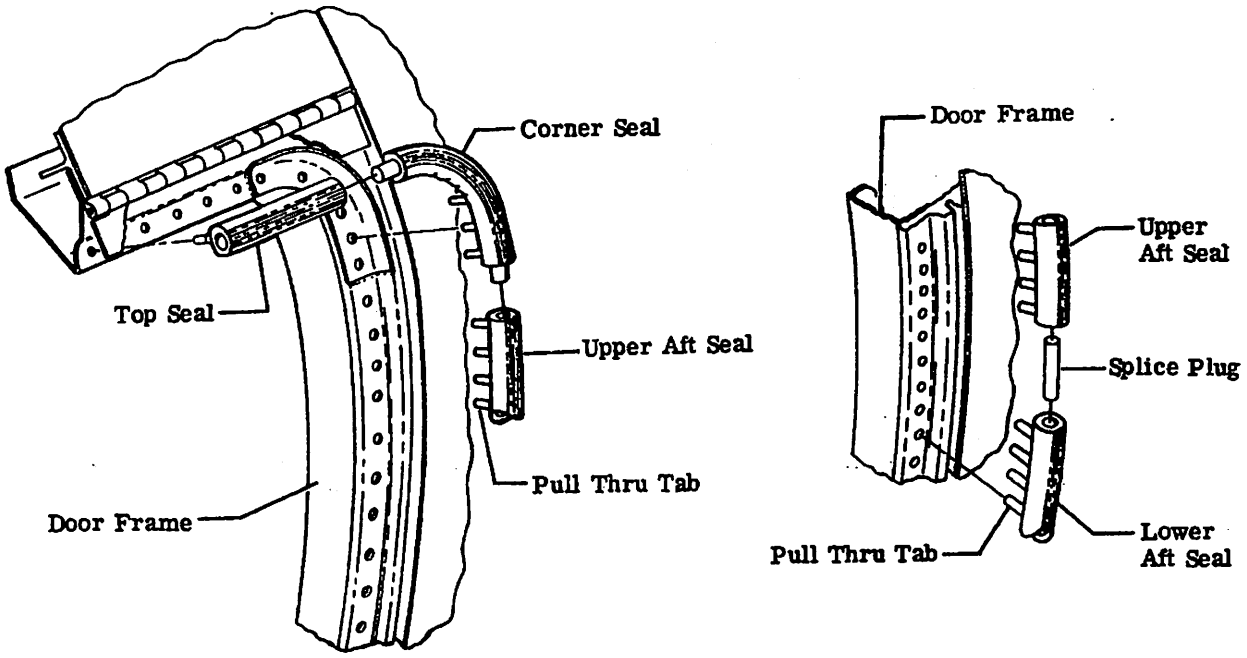


NOTE: 36-inch door shown. Seal installation typical for 24-inch door.

Door and Rain Seal Installation
Figure 205 (Sheet 1 of 3)

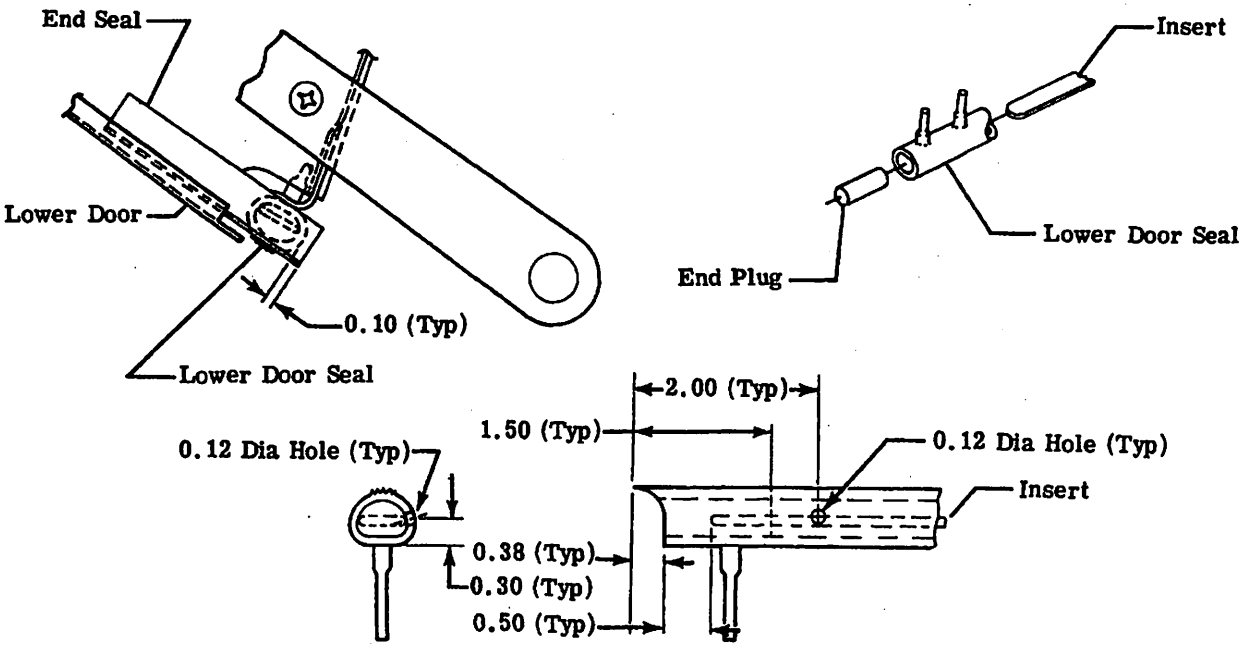


Detail A

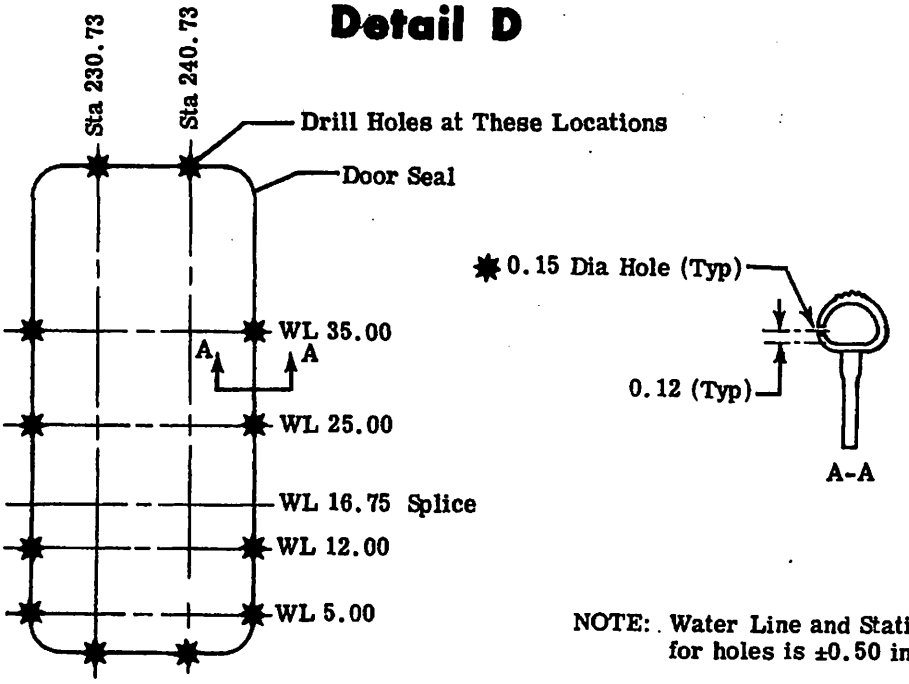


Detail B **Detail C**

Door and Rain Seal Installation
Figure 205 (Sheet 2 of 3)



Detail D



NOTE: Water Line and Station location for holes is ±0.50 inch.

Door and Rain Seal Installation
Figure 205 (Sheet 3 of 3)

EFFECTIVITY: ALL

(8) Apply RTV-154 adhesive and install bottom seal. Assure that pull-through tabs are fully engaged into holes in door frame and that corner seal plugs are fully inserted.

NOTE: Do not apply adhesive to corner seal plugs. Apply adhesive to the inside of the seal to be slipped over the plug. This will eliminate hard spots in the seal.

(9) Position upper aft seal so that pull through tabs align with holes in door frame and ends overlap splice mark and corner seal shoulder. Mark and trim upper aft seal so that one end will butt corner seal shoulder and the other end matches the splice mark.

(10) Apply RTV-154 adhesive and install upper aft seal. Assure that pull through tabs are fully engaged into holes and that corner seal plug is fully inserted.

NOTE: Do not apply adhesive to corner seal plug. Apply adhesive to the inside of the seal to be slipped over the plug. This will eliminate hard spots in the seal.

(11) Position lower aft seal so that pull through tabs align with holes in door frame and ends overlap upper aft seal and corner seal. Mark and trim lower aft seal so that one end will butt with corner seal shoulder and the other end will butt with upper aft seal.

(12) Mark the center of the splice plug. Apply RTV-154 adhesive to inside of upper aft seal and insert splice plug halfway into upper aft seal. Apply RTV-154 adhesive inside of lower aft seal and slip over the other half of splice plug so that it butts against upper aft seal.

(13) Apply RTV-154 adhesive and install lower aft seal. Assure that seal butts corner seal shoulder and that upper and lower aft seals butt. Assure that pull through tabs fully engage holes.

NOTE: Do not apply adhesive to corner seal plug. Apply adhesive to the inside of the seal to be slipped over the plug. This will eliminate hard spots in the seal.

(14) Position the upper forward seal so that pull through tabs align with holes in door frame and ends overlap splice mark and corner seal shoulder. Mark and trim upper forward seal so that one end will butt corner seal shoulder and the other end matches splice mark.

(15) Apply RTV-154 adhesive and install upper forward seal. Assure that pull through tabs are fully engaged into holes and corner seal plug is fully inserted.

NOTE: Do not apply adhesive to corner seal plug. Apply adhesive to the inside of the seal to be slipped over the plug. This will eliminate hard spots on the seal.

(16) Position lower forward seal so that pull through tabs align with holes in door frame and ends overlap upper forward corner seal so that one end will butt corner seal shoulder and the other end butts upper forward seal.

(17) Mark the center of the splice plug. Apply RTV-154 adhesive to inside of upper forward seal and insert splice plug halfway into upper forward seal. Apply RTV-154 adhesive inside of lower forward seal and slip over the other half of the splice plug so that it butts against upper aft seal.

(18) Apply RTV-154 adhesive and install lower forward seal. Assure that half of the splice plug is in each seal and that seals butt and lower forward seal butts corner seal shoulder. Assure that pull through tabs fully engage holes.

NOTE: Do not apply adhesive to corner seal plug. Apply adhesive to inside of the seal to be slipped over the plug. This will eliminate hard spots in the seal.

(19) Fabricate a hole cutting tool from 0.15 diameter tubing by countersinking one end .040 x 100°.

(20) Locate and, with the hole cutting tool chucked into a drill motor, cut holes in the seals as shown.

NOTE: Clean excess adhesive from seal joints prior to closing door.

C. Replace Lower Door Seal (See figure 205)

(1) Open passenger/crew door.

(2) Remove seal from lower door. Cut seal and remove metal insert from inside seal. Retain metal insert for reinstallation. Remove end seals from lower door.

(3) Clean all traces of old adhesive from door.

(4) Remove access covers on lower step and remove insulation from inside of step as required to gain access to pull through tab holes.

(5) Position lower door seal so that pull through tabs align with holes and ends overlap door. Apply RTV-154 adhesive (General Electric) and install seal. Assure that pull through tabs fully engage holes.

(6) Raise lower door until lower door seal touches seal around door frame. Mark and trim the lower door seal forward and aft ends so that it fits inside the seal around the door frame when the door is shut.

(7) Fabricate a hole cutting tool from 0.15" diameter tubing by countersinking one end .040 x 100°.
(8) Locate and, with hole cutting tool chucked into drill motor, cut two holes in the seal as shown.
(9) Apply AN-P-51 (vaseline) to metal insert and slide insert inside of seal and position so that cutouts in insert match lower door latch pin eyes.
(10) Apply RTV-154 adhesive to the inside of the ends of the seal. Cut end plugs 1.50 inch long and insert into the lower door seal.

NOTE: Do not apply adhesive to plug. Apply adhesive to the inside of seal. This will eliminate hard spots in the seal.

The extra length of plug, when forced into the end of the seal, secures the metal insert and keeps it from rotating.

(11) Apply RTV-154 adhesive to end seals, locate and install as shown.
(12) Remove excess adhesive prior to closing door.

EMERGENCY EXIT DOOR - DESCRIPTION AND OPERATION

1. General
 A. The emergency exit door is located on the fuselage right side in the aft passenger compartment. The door has an external and an internal latch which permits opening of the door from either inside or outside of the aircraft. The emergency exit door incorporates a plexiglass window identical to the other cabin windows.

2. Operation
 A. The emergency exit door is opened from the inside by grasping the internal latch handle and pulling inboard.
 B. The emergency exit door is opened from the outside by pressing the portion of the external latch handle labeled PUSH, pulling down on the handle and pushing inward on the upper portion of the door.

EMERGENCY EXIT DOOR - MAINTENANCE PRACTICES

1. General
 A. Maintenance practices for the emergency exit door consist of an inspection/check and window removal and installation.
 B. When safety wiring latch mechanism, do not use an excessive amount of wire which could cause interference when opening the door in an emergency.
 C. When removing the emergency exit door for inspection or window replacement, the window closeout panel and headliner in that area must be removed.
 D. When installing new window always use new fastener nuts. These nuts incorporate a break off torque limit which assures that the nuts are correctly torqued.

2. Inspection/Check
 A. Operationally Check and Inspect Emergency Exit Door (See figure 201)
 (1) Remove headliner in the area of the emergency exit door and remove window closeout panel attached to the door.
 (2) Push on portion of exterior latch handle, labeled PUSH, until the handle pops out.
 (3) Pull the external latch handle down observing freedom of movement.
 (4) With a man stationed inside the aircraft to catch the door, exert an inward force on the upper portion of the door and remove door.
 (5) Remove sheared safety wire from external latch pins, tee support and internal latch handle.
 (6) Operate external and internal release mechanisms and check for freedom of movement.
 (7) Inspect internal and external release mechanisms for corrosion and defective parts.
 (8) Inspect seal around door for deterioration.
 (9) Inspect window for scratches, cracks or crazing.
 (10) Inspect emergency exit placards for deterioration.
 (11) Position the external latch handle to the full locked position (flush with the fuselage).
 (12) With the internal latch handle in the full open position, position the emergency exit door into place.
 (13) Position the internal latch handle to the full locked position.
 (14) Safety wire the latch mechanism as shown. Assure that safety wire ends are bent to prevent bodily injury.

 NOTE: Use MS20995-AA32 safety wire to safety latch mechanism. Do not use an excessive amount which could cause interference.

(15) Install window closeout panel and headliner.

3. Approved Repairs

A. Replace Emergency Exit Door Window (See figure 202)

(1) Remove headliner in the area of the emergency exit door and remove window closeout panel attached to door.

(2) Grasp the internal latch handle and pull. Remove the emergency exit door and place on a suitable work surface so that new window will not be damaged.

(3) Remove screws from outer retainer perimeter.

(4) Using an allen wrench to hold fastener stationary, remove fastener nuts.

(5) Remove fasteners, retainer and window from emergency exit door.

(6) Remove sealant from emergency exit door. Refer to 20-00-00 for sealant removal.

(7) Apply faying surface seal on emergency exit door where old sealant was removed and allow to cure before proceeding with installation. Refer to 20-00-00.

(8) After sealant has cured apply faying surface seal to window and a second faying surface seal to door. Refer to 20-00-00.

(9) Insert four fasteners through emergency exit door, evenly spaced. Install window and retainer over fasteners and tighten new fastener nuts finger tight.

(10) Install remaining fasteners and new fastener nuts and tighten finger tight.

(11) Tighten fasteners in a clockwise sequence starting at 12, 3 and 9 o'clock. Torque fastener nuts until the hex portion breaks off.

NOTE: The fastener nuts incorporate a break off torque limit which assures that the fasteners will be correctly torqued when installed.

(12) Insert screws through retainer and tighten.

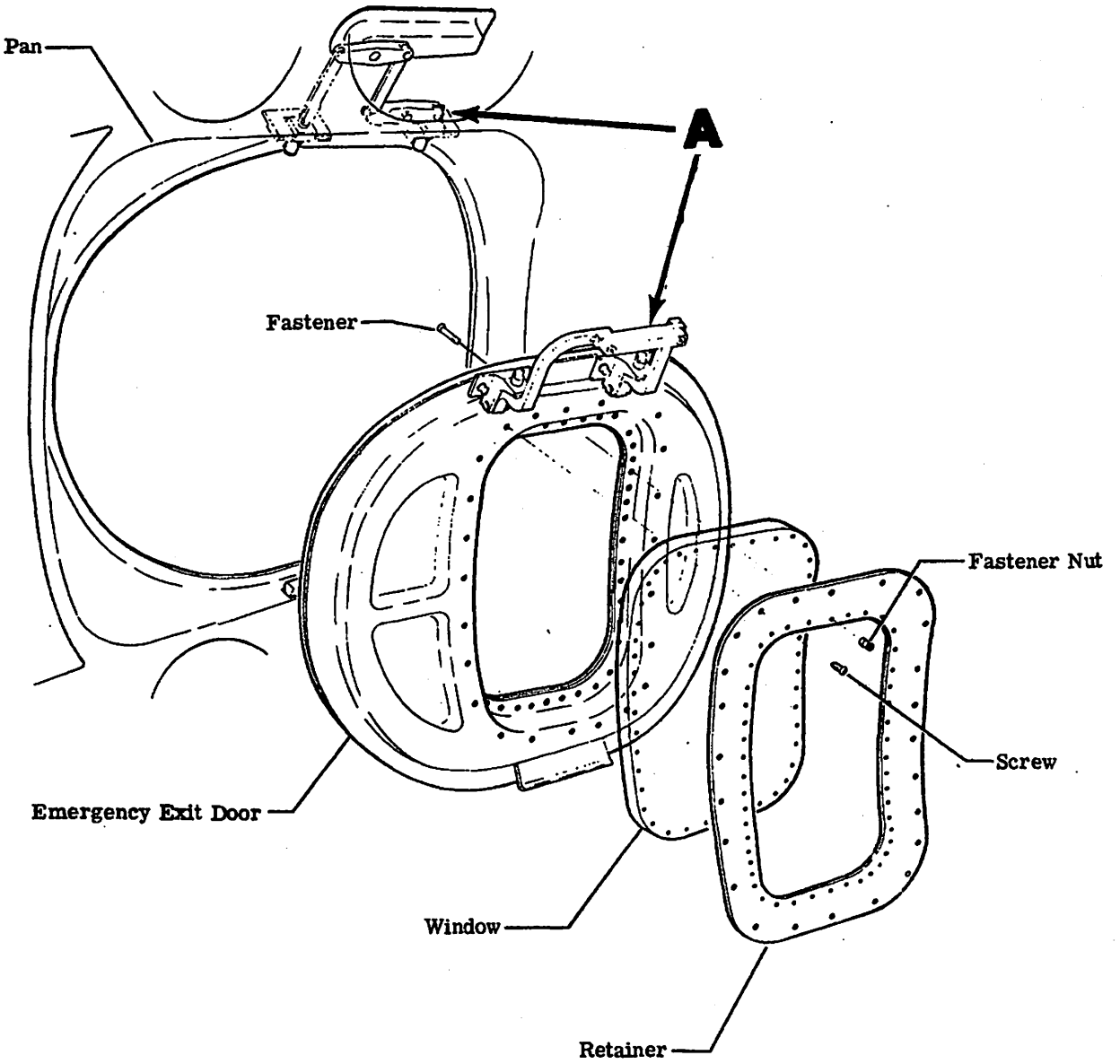
(13) Remove sheared safety wire from latch mechanism and handle.

(14) With internal latch handle in the open position, position emergency exit door on fuselage then position latch handle to the closed position.

(15) Safety wire the latch mechanism as shown in figure 201.

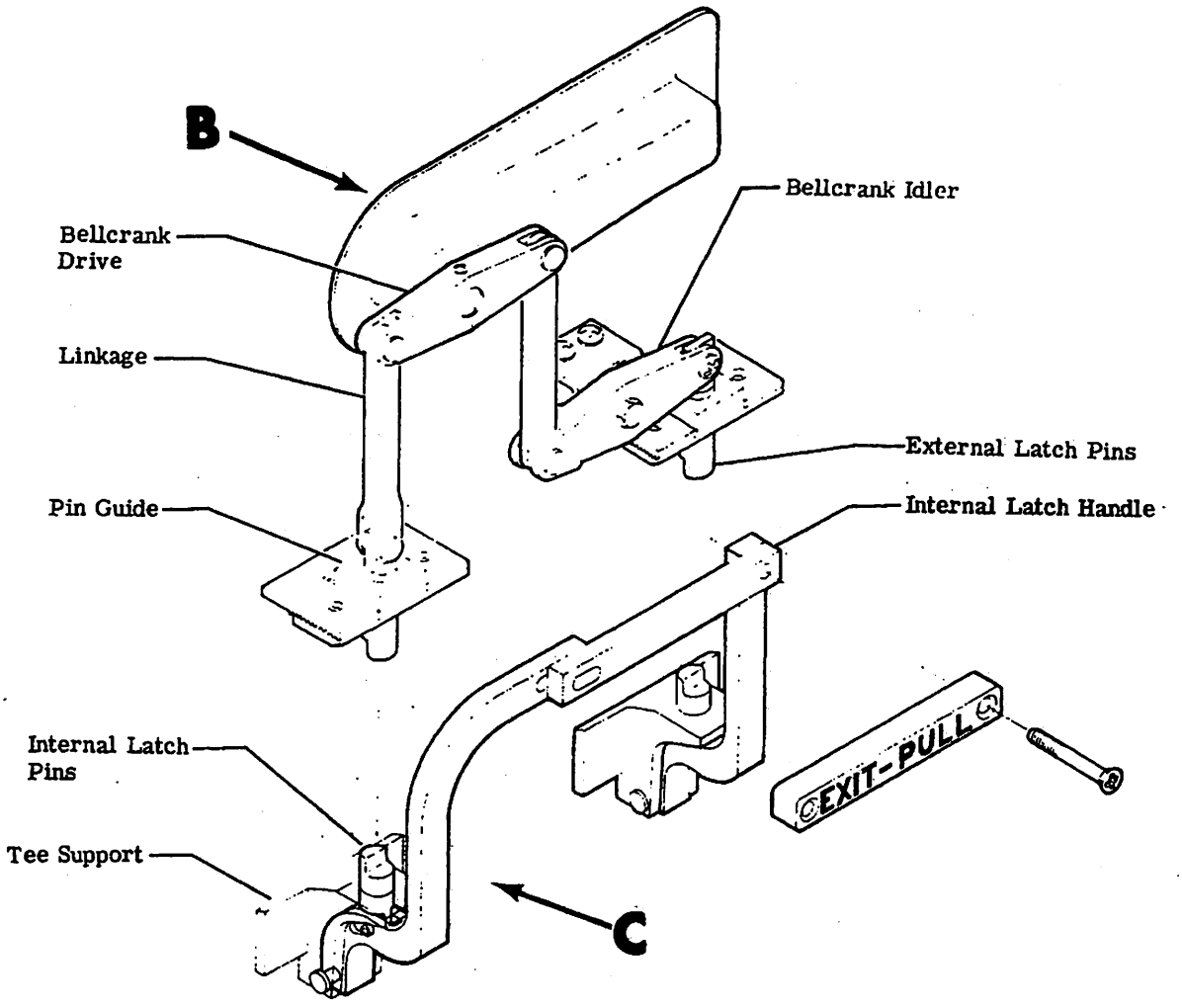
NOTE: Use MS20955-AA32 safety wire to safety latch mechanism. Do not use an excessive amount which could cause interference.

(16) Install window close out panel and headliner.

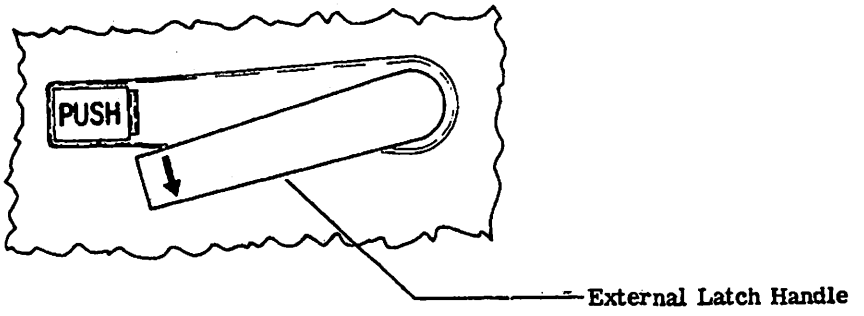


Emergency Exit Door Installation
Figure 201 (Sheet 1 of 3)

EFFECTIVITY: ALL

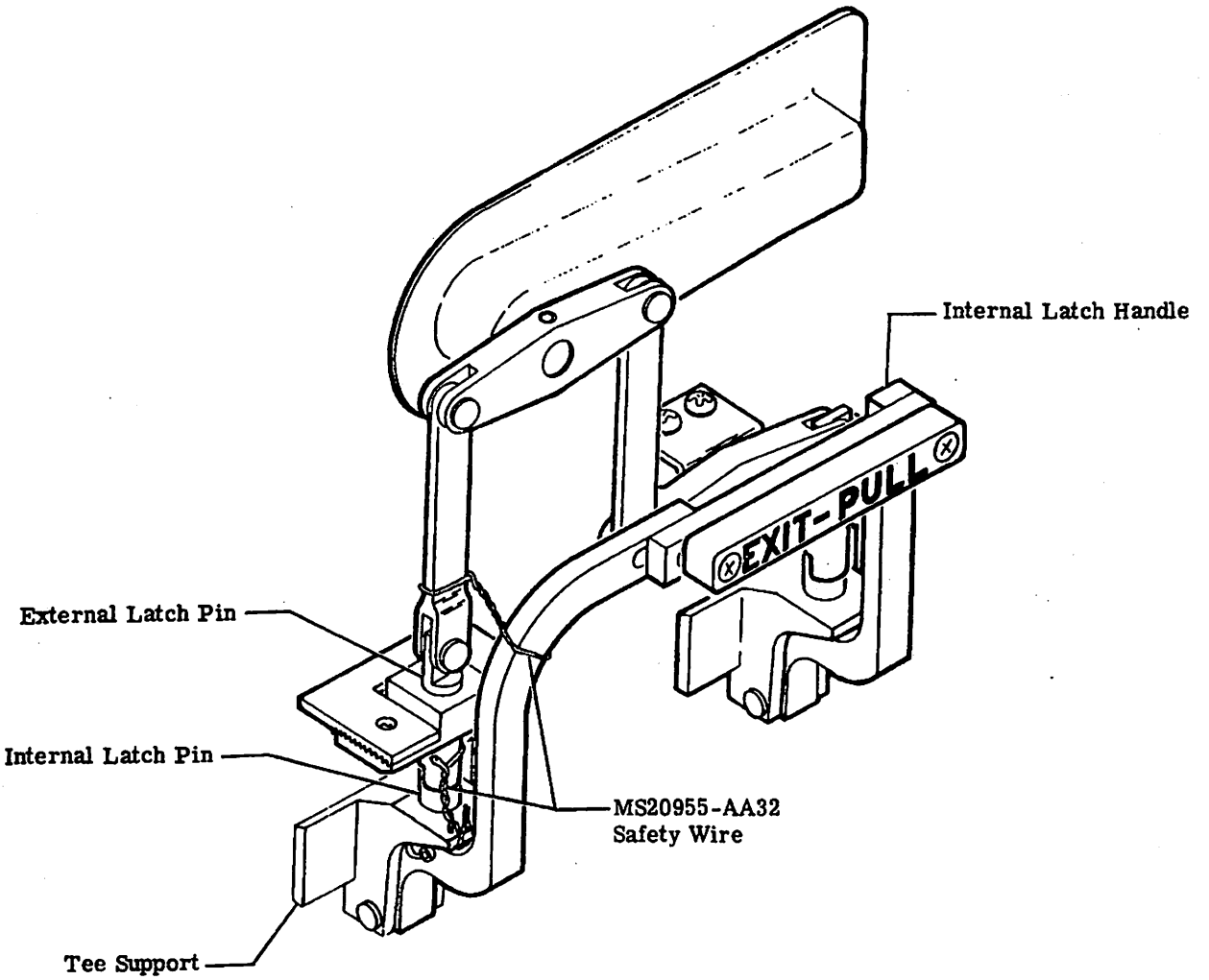


Detail A



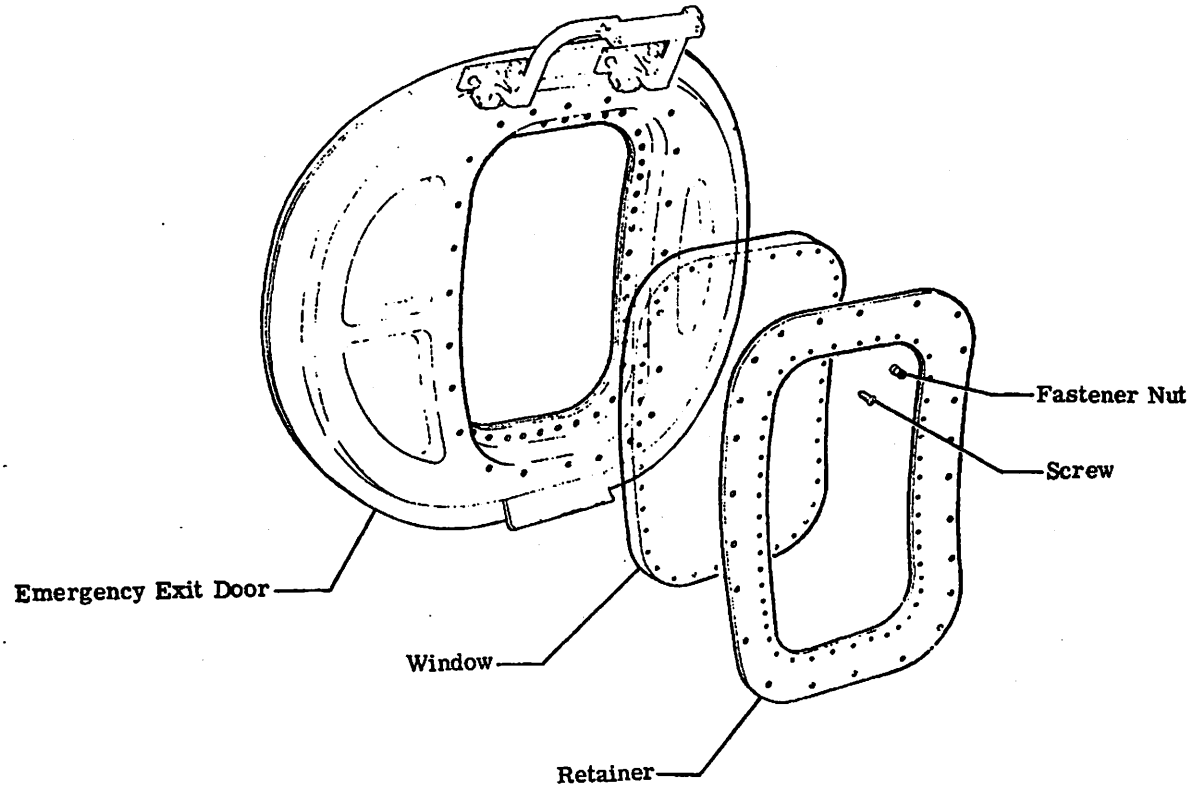
Detail B

Emergency Exit Door Installation
Figure 201 (Sheet 2 of 3)



Detail C

Emergency Exit Door Installation
Figure 201 (Sheet 3 of 3)



Emergency Exit Door Window Installation
Figure 202

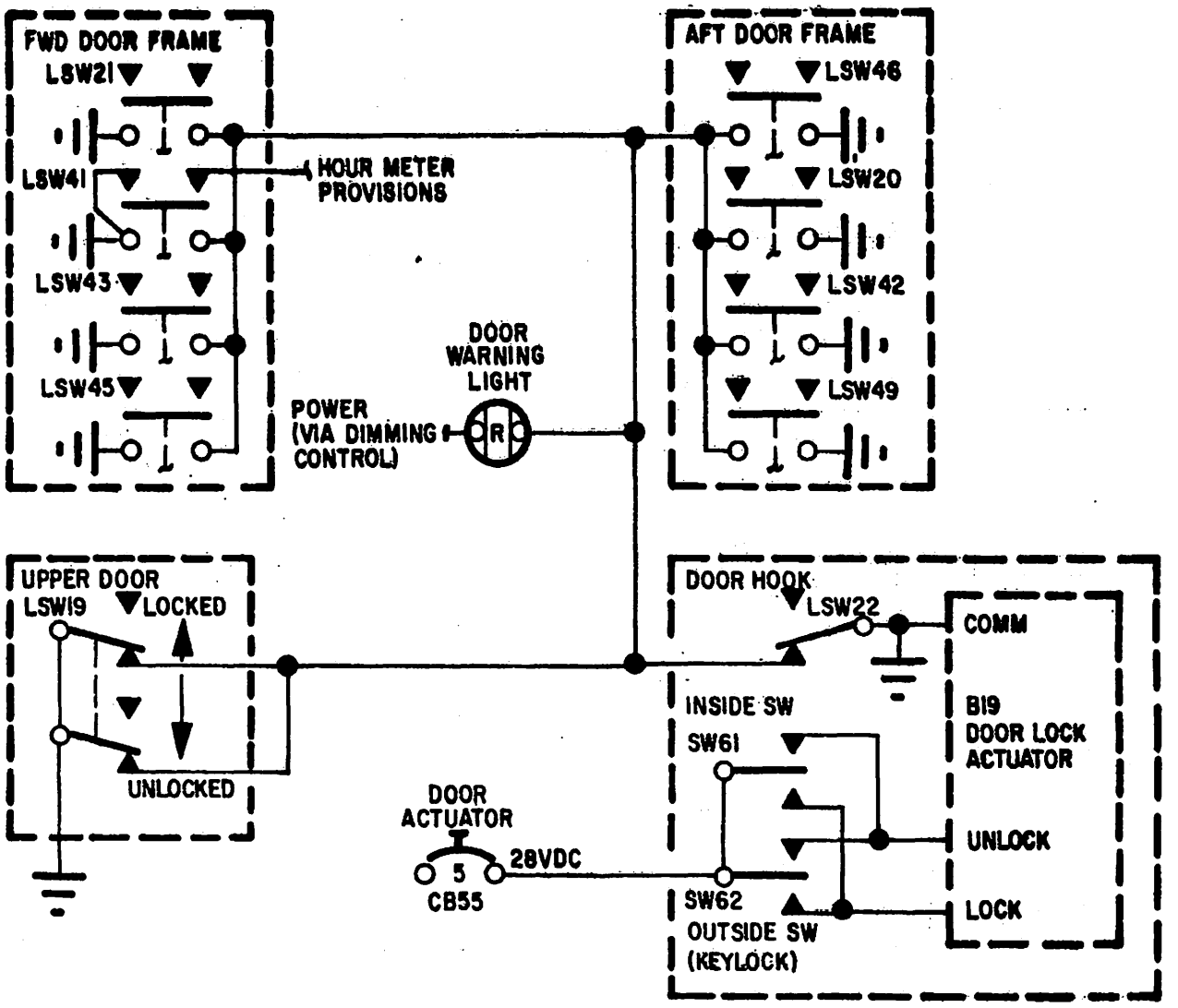
SERVICE DOORS - DESCRIPTION AND OPERATION

1. General
 A. Service doors are provided for access to the tailcone, nose compartment, engine oil filler and the oxygen bottle.
 B. The tailcone access door is located on the bottom of the fuselage aft of frame 26. The door is hinged on the forward side and is secured on the aft side by quick release latches. The tailcone access door provides access to the batteries, electrical components, fuel filters, refrigeration equipment, fire extinguisher bottles and plumbing, and hydraulic components and plumbing. Some aircraft have an optional drag chute installed on the tailcone access door.
 C. Two nose compartment access doors are located on top of the nose section forward of the windshield. The doors are completely removable by rotating the Camloc fasteners around the door perimeter. The nose compartment access doors provide access to the emergency air bottle, alcohol anti-ice tank and electronic equipment.
 D. An oil filler door is located on the right side of each engine nacelle. The doors are hinged at the bottom by a piano-type hinge and secured at the top by quick release latches. The oil filler door allows access to the oil filler tube.
 E. An oxygen service door is located on the right side of the dorsal fin. The door is hinged at the bottom by a piano-type hinge and secured at the top by quick release latches.

DOOR WARNING SYSTEM - DESCRIPTION AND OPERATION

1. General
 A. The door warning system provides the pilot with a visual indication when the passenger/crew door is not properly closed and latched. Latch pins, installed in the upper and lower passenger/crew doors, extend from the doors through the door frame and deenergize micro switches attached to the door frame when the doors are latched and shut.
 B. Eight switches are installed on the door frame which monitor the upper door pins. Two switches are installed on the door frame which monitor the lower door pins. A switch, installed in the lower door monitors the door hook(s).
 C. Small, round windows are installed in the upper door for visual verification that the latch pins have fully engaged the door frame. When the latch pins are fully engaged, an indicator on the linkage will align with an indicator on the door structure.

2. Operation (See figure 1)
 A. When the latch pins are fully engaged into the door frame each pin actuates a switch. A switch in the lower door is actuated by a striker mounted on the door hook torque tube. When the hook(s) is disengaged the switch is actuated. With both doors closed, all latch pins engaged and the door hook(s) disengaged the DOOR warning light on the glareshield will go out indicating proper door closure.

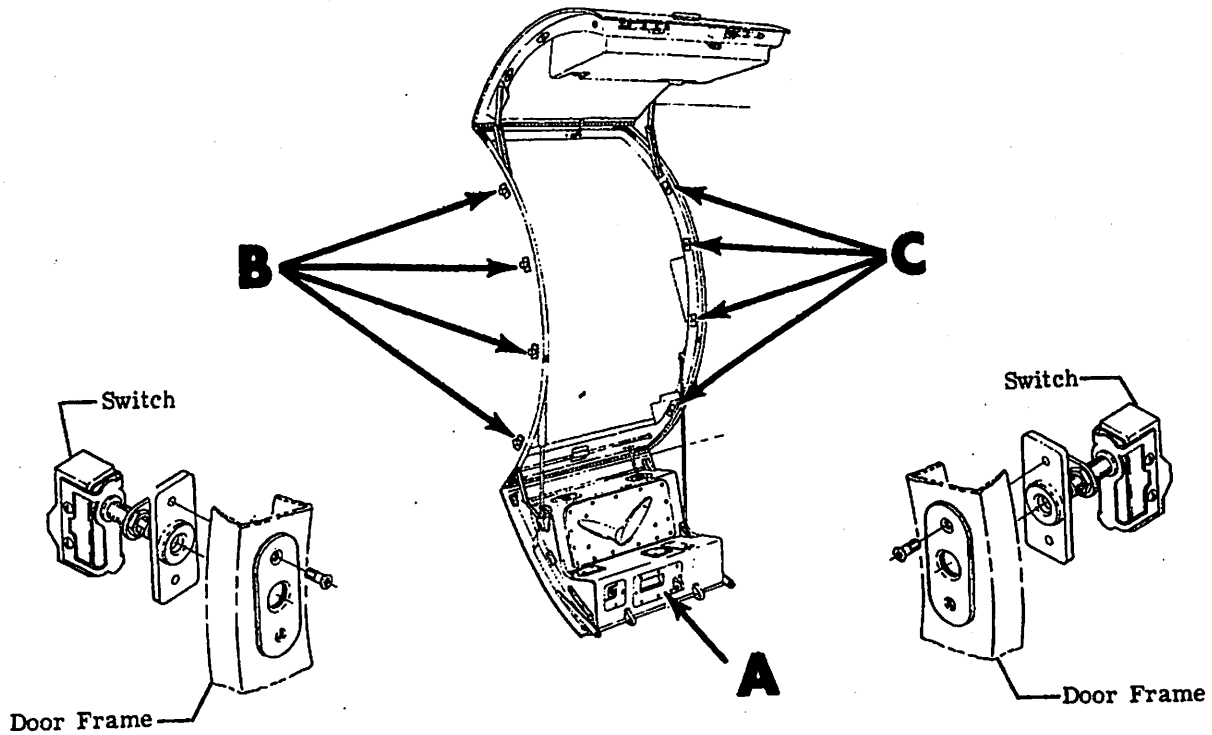


Door Warning System Schematic
Figure 1

DOOR WARNING SYSTEM - MAINTENANCE PRACTICES

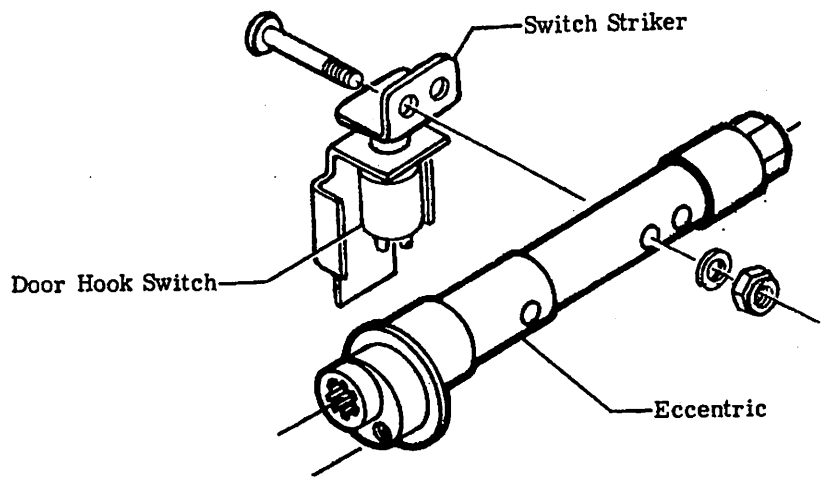
1. General
 A. Maintenance practices of the door warning system consist of adjusting the latch pin micro switches and the door hook micro switch.
 B. Prior to adjusting door hook micro switch, the actuator must be adjusted.

2. Adjustment/Test
 A. Adjust Door Hook Switch
 (1) Adjust door hook actuator. Refer to 52-10-00.
 (2) Remove lower center access cover from lower door.
 (3) Attach an ohmmeter to the micro switch.
 (4) Hold door switch to the open position until hook(s) is in the fully disengaged position.
 (5) Loosen jamnuts on switch and adjust switch until ohmmeter shows an open circuit.
 (6) Secure jamnuts, remove ohmmeter and replace access cover.
 B. Adjust Latch Pin Switches
 (1) Adjust door latch pins. Refer to 52-10-00.
 (2) Remove upholstery as necessary to gain access to switches.
 (3) Close and lock doors from inside the aircraft.
 (4) Attach an ohmmeter to the switch and adjust switch until ohmmeter indicates an open circuit.
 (5) Secure jamnuts, remove ohmmeter and install upholstery.



Detail B

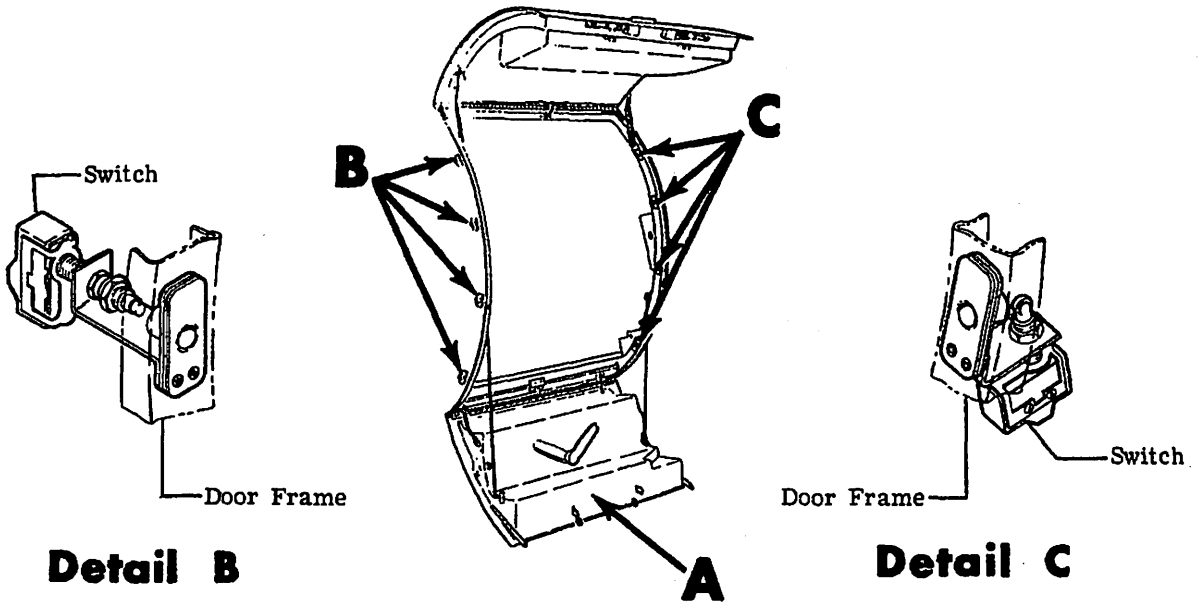
Detail C



Detail A

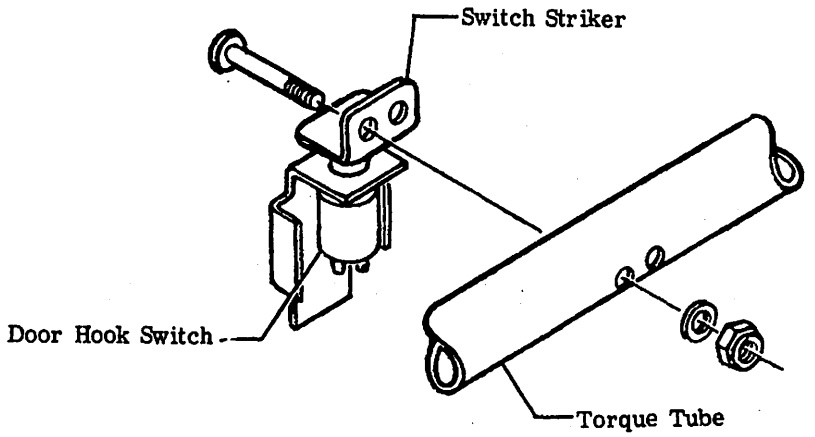
Door Warning Switch Installation
Figure 201 (Sheet 1 of 2)

EFFECTIVITY: AIRCRAFT WITH 24 INCH DOOR



Detail B

Detail C



Detail A

Door Warning Switch Installation
Figure 201 (Sheet 2 of 2)

EFFECTIVITY: AIRCRAFT WITH 36 INCH DOOR